PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-223299

(43)Date of publication of application : 09.08.2002

(51)Int.Cl. H04M 3/42
G06F 17/28
G10L 13/00
H04M 3/493
H04M 3/51

(21)Application number : 2001-017823

(22)Date of filing : 26.01.2001

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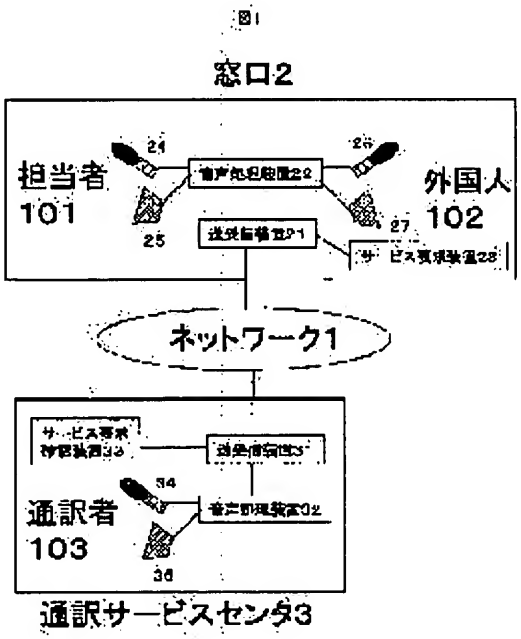
(54) INTERPRETATION SERVICE SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a high quality interpretation service by an interpreter easily in real time utilizing a network, especially, at a highly public window being utilized by foreigners with high frequency.

SOLUTION: A window 2 attended by a person in charge 101 and a foreigner 102 who cannot communicate directly with each other by the same language, and an interpretation service center 3 attended by an interpreter 103, are connected with a network 1 wherein interpretation service by the interpreter 103 is realized when voice data flows on he network 1. Microphones 24 and 26, speakers 25 and 27, a voice processor 22, a transmitter/receiver 21 and a service request unit 23 are provided at the window 2; and a microphone 34, a speaker 35, a voice processor 32, a transmitter/receiver 31 and a service request unit 33 are



provided at the interpretation service center 3.

LEGAL STATUS

[Date of request for examination]	24.09.2004
[Date of sending the examiner's decision of rejection]	
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]	
[Date of final disposal for application]	
[Patent number]	
[Date of registration]	
[Number of appeal against examiner's decision of rejection]	
[Date of requesting appeal against examiner's decision of rejection]	
[Date of extinction of right]	

(19)日本国特許庁（ＪＰ）　(12)公開特許公報（A）　(11)特許出願公開番号
特開2002－223299
（P2002－223299A）
(43)公開日　平成14年８月９日(2002.8.9)

(51)Int.Cl.'	識別記号	FI		テーマコード'(参考)
H04M 3/42		H04M 3/42	Z	5B091
G06F 17/28		G06F 17/28	Z	5D045
G10L 13/00		H04M 3/493		5K015
H04M 3/493		3/51		5K024
3/51		G10L 3/00	R	

審査請求　未請求　請求項の数17　ＯＬ　（全 14 頁）

(21)出願番号　特願2001－17823(P2001－17823)
(22)出願日　平成13年１月26日(2001.1.26)

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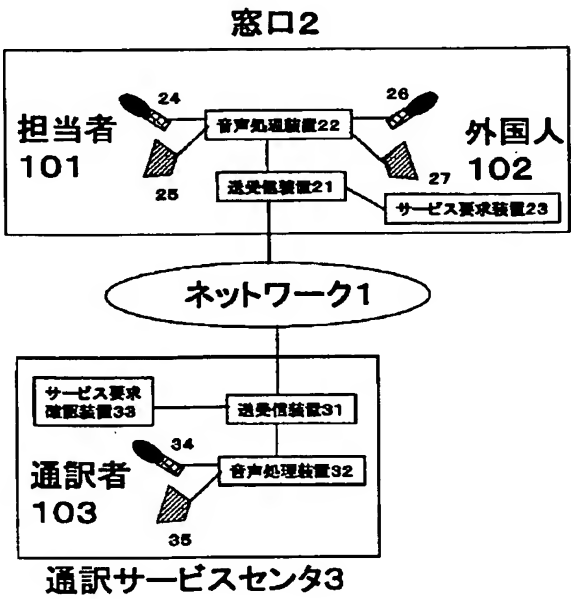
(54)【発明の名称】　通訳サービスシステム

(57)【要約】　（修正有）
【課題】通訳者による質の高い通訳サービスを、ネットワーク網を利用して、容易に、かつ、リアルタイムに得られるようにし、特に、公共性が高く、かつ、外国人による利用頻度も高い窓口において通訳サービスを提供する。
【解決手段】直接的に同じ言語でのコミュニケーションをとることが不可能な担当者１０１と外国人１０２とが存在する窓口２と、言語の通訳を行うことが可能な通訳者１０３が存在する通訳サービスセンタ３とが、ネットワーク１で接続され、音声のデータがネットワーク１上を流れることによって実現される通訳者１０３による通訳サービスであって、窓口２には、マイク２４，２６、スピーカ２５，２７、音声処理装置２２、送受信装置２１、および、サービス要求装置２３を具備し、通訳サービスセンタ３には、マイク３４、スピーカ３５、音声処理装置３２、送受信装置３１、および、サービス要求確認装置３３を具備する。

図1



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【特許請求の範囲】

【請求項１】通訳サービスを必要とする利用者が利用する利用者装置と、ネットワークを介して前記利用者装置と接続された通訳者装置が接続された通訳システムにおいて、

前記利用者装置が、前記ネットワークを介して、通訳を必要とする少なくとも一方の言語を示す言語識別情報および通訳を要求する要求情報を送信し、

前記通訳者装置が、当該通訳者装置を使用して通訳サービスの提供が可能な言語を示す通訳提供情報および前記言語識別情報に基づいて、前記言語識別情報が示す言語についての通訳が可能と判定された場合は、前記言語情報が示す言語の通訳を開始するために必要な情報処理を実行し、

前記利用者装置が、前記ネットワークを介して前記通訳者装置に、前記前記通訳を必要とする言語の言語情報を送信し、

前記通訳者装置が、前記ネットワークを介して前記利用者装置に、前記言語情報に対して通訳が施された言語情報を送信することを特徴とする通訳サービスシステム。

【請求項２】請求項１に記載の通訳サービスシステムにおいて、

前記通訳提供情報は、前記通訳者装置を使用して通訳を実行可能な通訳者の有無を示す情報であることを特徴とする通訳サービスシステム。

【請求項３】請求項２に記載の通訳サービスシステムにおいて、

前記通訳提供情報は、前記通訳者が他の通訳に携わっているかを示す情報を含むことを特徴とする通訳サービスシステム。

【請求項４】請求項１に記載の通訳サービスシステムにおいて、

前記通訳提供情報を格納した記憶装置を有し、前記ネットワークに接続され、前記通訳が可能か否かを判定する管理装置をさらに有することを特徴とする通訳サービスシステム。

【請求項５】請求項４に記載の通訳サービスシステムにおいて、

前記ネットワークには、複数の通訳者装置と接続され、

前記管理装置が、前記通訳提供情報として、通訳可能言語と前記複数の通訳装置それぞれを対応付けた情報を格納し、前記通訳提供情報に基づいて、通訳のための情報処理を実行する通訳者装置を決定することを特徴とする通訳サービスシステム。

【請求項６】請求項１乃至５のいずれかに記載の通訳サービスシステムにおいて、

前記言語情報には、音声情報および手話画像情報のうち少なくとも一方を含まれることを特徴とする通訳サービスシステム。

【請求項７】請求項１乃至６のいずれかに記載の通訳サービスシステムにおいて、

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前記利用者装置は、通訳の必要な複数の利用者からの言語情報を入力し、前記ネットワークを介して前記通訳者装置から送信される通訳された複数の言語情報を出力することを特徴とする通訳サービスシステム。

【請求項８】通訳サービスを必要とする利用者が利用する利用者装置とネットワークを介して接続された通訳者装置において、

前記利用者装置から前記ネットワークを介して送信される、通訳を必要とする少なくとも一方の言語を示す言語識別情報および通訳を要求する要求情報を受信する手段と、

当該通訳者装置を使用して通訳サービスの提供が可能な言語を示す通訳提供情報および前記言語識別情報に基づいて、前記言語識別情報が示す言語についての通訳が可能と判定された場合は、前記言語情報が示す言語の通訳を開始するために必要な情報処理を実行する手段と、

前記通訳を開始するために必要な情報処理が実行された場合に、前記利用者装置から前記ネットワークを介して送信される、前記前記通訳を必要とする言語の言語情報を受信する手段と、

前記ネットワークを介して前記利用者装置に、前記言語情報に対して通訳が施された言語情報を送信する手段とを有することを特徴とする通訳者装置。

【請求項９】請求項８に記載の通訳者装置において、

前記通訳提供情報は、前記通訳者装置を使用して通訳を実行可能な通訳者の有無を示す情報であることを特徴とする通訳者装置。

【請求項１０】請求項９に記載の通訳者装置において、

前記通訳提供情報は、前記通訳者が他の通訳に携わっているかを示す情報を含むことを特徴とする通訳者装置。

【請求項１１】請求項８に記載の通訳者装置において、

前記通訳提供情報を格納した記憶装置をさらに有することを特徴とする通訳者装置。

【請求項１２】請求項８乃至１１のいずれかに記載の通訳者装置において、

前記言語情報には、音声情報および手話画像情報のうち少なくとも一方を含まれることを特徴とする通訳者装置。

【請求項１３】請求項８乃至１２のいずれかに記載の通訳者装置において、

前記利用者装置からの言語情報を受信する手段は、前記利用者装置で入力された複数の言語情報を受信し、

前記通訳された情報を送信する手段は、前記複数の言語情報それぞれに対して通訳された複数の言語情報を送信することを特徴とする通訳者装置。

【請求項１４】通訳サービスを必要とする利用者が利用する利用者装置および前記通訳サービスを行う通訳者が利用する複数の通訳者装置とネットワークを介して接続された通訳サービス管理装置において、

通訳可能言語と前記複数の通訳装置それぞれを対応付けた通訳提供情報を格納する手段と、
前記利用者装置から前記ネットワークを介して送信される、通訳を必要とする少なくとも一方の言語を示す言語識別情報および通訳を要求する要求情報を受信する手段と、
前記通訳提供情報および前記言語識別情報に基づいて、前記言語識別情報が示す言語についての通訳サービスを提供可能な通訳者装置を特定する手段と、
特定された前記通訳者装置から前記利用者装置への通訳サービスを実現するための情報処理を実行する手段とを有することを特徴とする通訳サービス管理装置。
【請求項１５】請求項１４に記載の通訳サービス管理装置において、
前記通訳サービスを実現するための情報処理を実行する手段は、前記利用者装置に特定された前記通訳者装置を特定する情報を送信することを特徴とする通訳サービス管理装置。
【請求項１６】請求項１４に記載の通訳サービス管理装置において、
前記通訳サービスを実現するための情報処理を実行する手段は、特定された前記通訳者装置に前記利用者装置を特定する情報および前記利用者装置より要求されている翻訳サービスの内容を特定する情報を送信することを特徴とする通訳サービス管理装置。
【請求項１７】請求項１４乃至１６のいずれかに記載の通訳サービス管理装置において、
前記言語情報には、音声情報および手話画像情報のうち少なくとも一方を含まれることを特徴とする通訳サービス管理装置。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、通訳者によるリアルタイムでの通訳サービスを実現するための情報処理に関する。
【０００２】
【従来の技術】交通の便が発達するのに伴ない、海外からの訪問者が増えている。しかし、日本を例にとると、日本語を公用語としている外国はなく、日本を訪問する外国人は、日本語による読み書き、及び、会話が不得意である場合がほとんどである。逆に、日本人が外国に訪問する場合でも、現地の公用語を使いこなせるとは限らない。こうした状況において、相互に言葉を理解することができない外国人との間で、交渉、商談、契約、取引、案内などを行うには、翻訳や通訳を必要とする場合が少なくない。
【０００３】しかし、コストや適任者不足などから、誰しもが翻訳者や通訳者を常に同行・同伴・準備できるとは限らない。ましてや様々な外国語すべてに対応できることに関してはなおさらである。
【０００４】従来の技術では、自動翻訳装置（例えば、特開2000-207398号公報）や、電子辞書（例えば、特開2000-194701号公報）、音声認識装置を利用した通訳サービス（特開2000-112939号公報）などがあるが、いずれもコンピュータによる通訳・翻訳処理を主としたものであり、従来翻訳者や通訳者が行っていた質の高いサービスになっているとは言いがたい。しかし、インターネット関連技術、特に、電子メールやWWW技術の発達により、翻訳者に文書を電子的に送付し、その翻訳者に翻訳結果を返信してもらう、オフラインでの質の高い翻訳サービスは容易に得られるようになってきている。
【０００５】
【発明が解決しようとする課題】本発明の課題は、通訳者による質の高い通訳サービスを、ネットワーク網を利用して、容易に、かつ、リアルタイムに得られるようにするものである。特に、公共性が高く、かつ、外国人による利用頻度も高い窓口（市役所や行政機関、交番、銀行、交通機関などの窓口）において通訳サービスを提供することにある。
【０００６】本発明のその他の課題は、対応可能な通訳サービス提供者と容易にコネクションがとれること、サービス中の排他処理が可能なこと、スケジュール管理によって全体の効率化を図ること、正当な契約者のみの提供が行えること、直接的な通訳が存在しない場合にも対応できること、移動しながらでも通訳サービスが提供できること、手話通訳にも応用することである。
【０００７】
【課題を解決するための手段】上記の課題を解決するために本発明では、以下の構成をとる。通訳を希望する利用者が利用する端末装置から要求される通訳を実行可能な装置または通訳者を特定し、特定された装置または通訳者が通訳のための情報処理または通訳自体を実行する。
【０００８】より詳細には、以下の通りの構成をとる。通訳者による質の高い通訳サービスを、ネットワーク網を利用して、容易に、かつ、リアルタイムに得られるようにするために、直接的に同じ言語でのコミュニケーションをとることが不可能な担当者と外国人とが存在する窓口と、言語の通訳を行うことが可能な通訳者が存在する通訳サービスセンタとが、音声のデータが流れるネットワークで接続し、窓口、通訳サービスセンタには、マイク、スピーカ、音声処理装置、送受信装置を用意する。さらに、窓口にはサービス要求装置、通訳サービスセンタには、サービス要求確認装置を持たせ、担当者、または、外国人がサービス要求装置を利用して、通訳サービスの要求を行い、通訳者がサービス要求確認装置を利用して、要求を受け入れるかどうかを応答し、要求受け入れる場合に、窓口と通訳サービスセンタの間の通信路を確立して、音声のデータを相互に送受信する。
【０００９】対応可能な通訳サービス提供者と容易にコ

ネクションがとれるようにするために、通訳サービス提供者、提供内容、提供状態の情報を管理する管理センタを接続し、窓口からはサービス要求時には、まず、ここに問い合わせを行い、対応可能な通訳サービス提供者の指示を受ける。

【００１０】サービス中の排他処理が可能にするために、通訳サービスセンタのサーバは、同時に２つ以上の窓口と論理的なコネクションをはることができないようにする。

【００１１】スケジュール管理によって全体の効率化を図るために、管理センタで、窓口の待ち行列を管理し、通訳サービスセンタよりサービス終了の通知があり次第、待ち行列の中から窓口を割り当てて、通訳サービスを提供する。

【００１２】正当な契約者のみの提供が行えるようにするために、電子認証技術の原理を利用して、通信相手が正当な契約者であるかどうかを認証する。

【００１３】直接的な通訳が存在しない場合にも対応できるようにするために、通訳サービスセンタを多段的に実施し、中間の通訳サービスセンタでは必要に応じて他の言語への通訳を行って、転送する。

【００１４】移動しながらでも通訳サービスが提供できるようにするために、通訳サービスセンタとして携帯電話や携帯端末を利用し、管理センタでは、移動中に変化するあて先などを管理する。

【００１５】手話通訳にも応用するために、窓口と通訳サービスセンタには、カメラ、モニタ、画像処理装置を持たせ、音声と画像データの送受信を行えるようにする。

【００１６】

【発明の実施の形態】図１は、本発明の通訳サービスを実現するシステムを示したものである。窓口２と通訳サービスセンタ３のそれぞれのシステムは、ネットワーク１で接続されている。なお、窓口２としては、役所、交番、観光案内所、交通機関、コンビニエンスストア、銀行、商店、企業の会議室などの窓口のように、外国人が訪れる可能性があるところには、全て適用可能である。

【００１７】窓口２のシステムは、マイク２４，２６、及び、スピーカ２５，２７、音声処理装置２２、送受信装置２１、サービス要求装置２３を有している。音声処理装置２２は、マイク２４，２６が集音した音をデジタルデータに変換する機能と、デジタルデータから音に変換してスピーカ２５，２７から出力する機能をもつ装置である。サービス要求装置２３は、通訳サービスの開始・終了を要求したり、外国語を選択要求したりするための装置である。送受信装置２１は、ネットワーク１上にある他の送受信装置３１との間でデータを送受信する装置である。

【００１８】通訳サービスセンタ３のシステムは、マイク３４，及び、スピーカ３５、音声処理装置３２、送受信装置３１、サービス要求確認装置３３を有している。音声処理装置３２は、マイク３４が集音した音をデジタルデータに変換する機能と、デジタルデータから音に変換してスピーカ３５から出力する機能をもつ装置である。サービス要求確認装置３３は、通訳サービスの開始要求が来たときに、要求を受けるかどうかの応答を返すための装置である。送受信装置３１は、ネットワーク１上にある他の送受信装置２１との間でデータを送受信する装置である。

【００１９】図２は、通訳サービスを受けるための基本的な流れを示したものである。窓口２を訪れた外国人１０２が、担当者１０１と交渉などを行いたい場合、まず、サービス要求装置２３を用いて、通訳サービスを受けたい旨要求を出す（ステップ１００１）。この要求は送受信装置２１，３１、ネットワーク１を介して通訳サービスセンタに送られ（ステップ１００２）、サービス要求確認装置３３に音やランプなどによって、通訳者１０３に要求が通知される。次に、通訳者１０３は、要求を受ける場合、サービス要求確認装置３３を用いて、通訳サービスを提供する旨応答を返す（ステップ１００６、１００７）。これらやりとりが正常に行われると、送受信装置２１，３１との間で論理的なコネクションが確立して（ステップ１００３）、通訳サービス中となる。この状態は、サービス要求装置２３によって、通訳サービス終了要求がでるまで続き、終了要求があったときには（ステップ１００４）、コネクションを切断する（ステップ１００５）。

【００２０】通訳サービス中（ステップ１００８）は、担当者１０１や外国人１０２や通訳者１０３が発声した音声は、マイク２４，２６，３４を通じて集音され、音声処理装置２２，３２によってデジタルデータに変換され、送受信装置２１，３１、ネットワーク１を介して相手側にデータ通信される。そして、受信したデジタルデータは、音声処理装置２２，３２によって音声に合成され、スピーカ２５，２７，３５に音声出力され、相手の人に伝わる。

【００２１】以上により、窓口２自身には物理的に通訳者がいなくても外国人１０２の訪問があったときに、ネットワーク１上で提供されている通訳者１０３による通訳サービスを受けることが可能となる。また、例えば、ネットワーク１としてインターネット網を利用することで、通訳サービスに関わる通信コストを下げることが可能となり、また、通訳サービスセンタ３そのものが外国にあっても容易にサービス提供することができる。

【００２２】図３は、本発明の通訳サービスであって、通訳サービスを登録受付のもと、提供するシステムを示したものである。管理センタ４のシステムは、サービス管理装置４３、送受信装置４１を有している。サービス管理装置４３は、図４に示したとおり、提供可能な外国語２００１、通訳サービスを提供する通訳サービス提供

者（または、通訳サービスセンタ）２００２、通訳サービスが可能かどうかの状態２００３を管理している。ここで、１つの通訳サービス提供者が複数の外国語をサポートしている場合もある。また、状態としては、実際に今現在サービスを実施している「サービス中」、サービスの受け入れを待っている「待機中」、サービス提供が実施不可能な「停止中」とがある。

【００２３】通訳サービスセンタ３のシステムには、図１を用いて説明したものの他に、サービス登録装置３６を有している。サービス登録装置３６は、提供できる通訳サービスの種類や、通訳サービスが提供可能な状態にあるかどうかを登録するための装置である。図５は、通訳サービスを登録するための基本的な流れを示したものである。

【００２４】通訳サービスセンタの通訳者１０３は、通訳サービスを開始したい場合、まず、サービス登録装置３６を用いて、対応可能な外国語を選択し（ステップ１０１１）、サービス登録を行う（ステップ１０１２）。対応可能な外国語は複数であっても良い。この登録は、送受信装置３１，４１、ネットワーク１を介して管理センタ４に送られ、サービス管理装置４３に、対応可能な外国語と、サービス提供者を表す名前（またはあて先など）と、状態（「待機中」）とが登録される。通訳サービスを停止したい場合も同様に、サービス登録装置３６を用いて、登録解除が行われる（ステップ１０１３、１０１４）。図６は、通訳サービス提供者を探し、「サービス中」に至るための基本的な流れを示したものである。

【００２５】窓口２の外国人１０２は、サービス要求装置２３を用いて、通訳してほしい外国語を選択し（ステップ１０２１）、通訳サービスを受けたい旨要求を出す（ステップ１０２２）。この要求は送受信装置２１，４１、ネットワーク１を介して管理センタ４のサービス管理装置４３に送られる。サービス管理装置は、要求内容にある外国語で「待機中」であるものを公平なポリシに基づき検索し（ステップ１０２３）、検索結果として通訳サービス提供者の名前（またはあて先）を返す（ステップ１０２４）。サービス要求装置２３は、この検索結果を受け取ると、さらに、検索結果に示されたサービス提供者に通訳サービスを受けたい旨要求を出す（ステップ１０２５）。この要求は送受信装置２１，３１、ネットワーク１を介して通訳サービスセンタ３のサービス要求確認装置３３に送られる。以下、図２を用いて説明したのと同様な手続きを経て、「サービス中」となる。

【００２６】なお、通訳サービス中になったことは、窓口２のサービス要求確認装置２３か、通訳サービスセンタ３のサービス要求確認装置３３のいずれかから、管理センタ４のサービス管理装置４３に伝えられ、サービス管理装置は、該当するものの状態を「サービス中」とする。１つの通訳サービスセンタが複数の外国語をサポートする場合には、該当する通訳サービスセンタの状態を全て「サービス中」とする。なお、通訳サービスセンタ３のサービス要求確認装置３３から伝えられるのが通常の運用である。

【００２７】「サービス中」の状態は、窓口２のサービス要求装置２３によって、通訳サービス終了要求がでるまで続き、終了要求があったときには、窓口２と通訳サービスセンタ３との送受信装置２１，３１のコネクションが切断され、サービスが終了したことは、窓口２のサービス要求確認装置２３か、通訳サービスセンタ３のサービス要求確認装置３３のいずれかから、管理センタ４のサービス管理装置４３に伝えられ、サービス管理装置は、該当するものの状態を「待機中」とする。なお、通訳サービスセンタ３のサービス要求確認装置３３から伝えられるのが通常の運用である。

【００２８】以上により、窓口２では通訳者がいなくても外国人の訪問があったときに、ネットワーク上で提供されている通訳サービスの中から、必要な外国語の通訳サービスを提供し、かつ、通訳サービスが提供可能な状態にあるものを、選択することが可能となる。また、通訳者側も複数の外国語に対応できる場合もそのことが適切に対処される。さらに、通訳サービスの提供者が特定のところに偏ることなく適切に分散されることが可能となる。

【００２９】なお、上記の例では外国語ごととしたが、特定の専門分野を付加して管理し、また、サービス要求を行っても良い。例えば、「法律専門の英語」「経済専門のフランス語」などである。このレベルを加えれば、専門用語まで含めた通訳サービスも可能となり、さらに質の高いサービスが期待できる。

【００３０】図７は、本発明の通訳サービスであって、移動先からの通訳サービスを提供するシステムを示したものである。通訳サービスセンタ５のシステムは、ネットワーク１と接続可能な携帯電話、または、携帯端末５１を有している。この携帯電話、携帯端末は、音声通話（または、音声入出力）が可能なものである。また、携帯電話のボタンや携帯端末のキーボードを適切に操作することで、サービス要求確認やサービス登録を行うことができるものである。また、携帯電話や携帯端末には、サービスの要求があったときには、音やランプ、振動などの手段により、通訳者１０３に知らされるものである。また、携帯電話や携帯端末の名前やあて先としては、電話番号、モバイルＩＰ、ダイナミックドメインネームなどが利用される。

【００３１】なお、同様にして、窓口についてもネットワーク１と接続可能な携帯電話、または、携帯端末によってシステムを構成することもできる。

【００３２】以上により、通訳者は、固定の通訳サービスセンタ以外でもどこからでもサービスを提供することができる。

【００３３】図８は、本発明の通訳サービスの排他処理を示したものである。通訳サービスセンタ３０１と、窓口２０１とが、論理的なコネクションを確立し、「サービス中」となっている場合には、他の窓口２０２から通訳サービスセンタ３０１に対してコネクション接続要求があっても、接続は拒否される。これは、通訳サービスセンタ側のサーバ機能が２つ以上のコネクションを確立できないようにすることで実現できる。

【００３４】以上により、通訳者が、通訳サービスを提供中に、他から割り込まれることなく、継続的にサービスを続行することができる。

【００３５】図９、１０は、本発明の通訳サービス提供者のスケジュール管理を示したものである。

【００３６】窓口２の外国人１０２は、サービス要求装置２３を用いて、通訳してほしい外国語を選択し（ステップ１０３１）、通訳サービスを受けたい旨要求を出す（ステップ１０３２）。この要求は送受信装置２１，４１、ネットワーク１を介して管理センタ４のサービス管理装置４３に送られる。サービス管理装置は、要求内容にある外国語で「待機中」であるものを公平なポリシに基づき検索する（ステップ１０３３）が、「待機中」であるものがない場合、この要求をサービス要求待ちの待ち行列に格納する（ステップ１０３４）。通常は、図１１に示したように外国語２０１１ごとのサービス待ち２０１２の最後列に入れる。そして、待ち行列に入った旨、要求者を返す（ステップ１０３５）。これで、利用者は、待ち状態に入る。

【００３７】管理センタ４のサービス装置は、任意の通訳サービスセンタより、サービス終了の通知を受けると、該当する外国語（通訳サービス提供者が複数の外国語に対応できる場合はそれら全ての外国語）に対して、待ち行列に要求者がいないかを確認し（ステップ１０４３）、待ちの要求者がいれば、ポリシに従って優先順位の最も高い待ちの要求者を選択し、待ちの要求者の窓口に対して、サービスを終了した通訳サービス提供者の名前（またはあて先）を返す（ステップ１０４４）。窓口２のサービス要求装置２３は、この結果を受け取ると、図２を用いて説明したのと同様な手続きを経て、「サービス中」となる。

【００３８】以上により、要求者が必要とする外国語の通訳サービスが全て「サービス中」である場合も、適切に利用の順番待ちが可能となる。また、通訳サービス提供者側も１つの「サービス」を終了した時点で、またすぐに次のサービスを行うことが可能であり、効率が良い。

【００３９】図１２は、本発明の通訳サービスセンタ、または、窓口の認証に関するシステムを示したものである。

【００４０】管理センタ４は、正当な通訳サービスセンタ、または、正当な利用者に対して、正当な利用者であることを示す情報、または、データを提供する。ここで、情報、または、データとは、ＩＤとパスワードや、公開鍵暗号方式で利用される秘密鍵をさす。秘密鍵の場合には、ＩＣカードのような安全性の高い媒体に格納されていることが望ましい。以下、公開鍵暗号方式を利用して、正当な利用者を検証する方法により説明する。

【００４１】管理センタ４は、利用者検証装置４８を有している。利用者検証装置は、検証したい相手にチャレンジコードを発行したり、チャレンジコードへの署名を検証したりするものである。チャレンジコードの署名は、利用者の公開鍵によって検証する。管理センタ４は、利用者の公開鍵を安全に入手できるものとする。

【００４２】通訳サービスセンタ３や、窓口２は、署名装置２８，３８を有している。署名装置は、管理センタから提示されたチャレンジコードに対して、それぞれの秘密鍵を用いて電子署名をするものである。このとき、電子認証の原理を用いて、正当な利用者であることを確認する。

【００４３】電子認証の原理は、正当な利用者の確認を必要とするタイミングにおいて、管理センタ４の利用者検証装置４８で、ランダムなチャレンジコードを生成して、検証したい相手（窓口２、または、通訳サービスセンタ３）に送り、検証したい相手の署名装置２８、または、３８に、検証したい相手の秘密鍵によってチャレンジコードへの電子署名をしてもらって、返信してもらい、利用者検証装置４８で、検証したい相手の公開鍵を使って電子署名を復号化して、チャレンジコードと一致するかを確認する。

【００４４】上記手続きは、電子認証の一般的な原理を説明したものであり、その他の電子認証の原理を用いても良い。以上により、管理センタ４は、窓口２、または、通訳サービスセンタ３の利用者を認証することができる。

【００４５】上記手続きは、管理センタ４による窓口２の認証、または、管理センタ４による通訳サービスセンタ３の認証を説明したが、この逆方向、つまり、窓口２による管理センタ４の認証、または、通訳サービスセンタ３による管理センタ４の認証、さらには、窓口２と通訳サービスセンタ３間の相互認証も適用可能である。

【００４６】以上により、例えば、管理センタ４と契約を結んでいる通訳サービスセンタ３や、窓口２のみ（以下、契約者）が通訳サービスの恩恵を受けることができる。また、契約者に限定することで通訳サービスの品質を一定以上のレベルに保つことができる。さらに、契約者の不正や品質劣化が認められたときに該当する契約者を容易に排除することができる。さらに、電子認証は窓口利用者から利用料を徴収したり、通訳サービス提供者に利用料を支払ったりする際の根拠として役に立つ。

【００４７】図１３は、本発明の通訳サービスを多段で実現するシステムを示したものである。窓口２０３と通

訳サービスセンタ３０３、３０４のそれぞれのシステムは、ネットワーク１で接続されている。

【００４８】通訳サービスセンタ３０３のシステムは、マイク３４，及び、スピーカ３５、音声処理装置３２、送受信装置３１、サービス要求確認装置３３の他に通信先制御装置３９を有している。通信先制御装置３９は、ボタンなどの操作によって、通信先を制御する機能と、通信データを一時的に蓄積する機能をもつ装置である。

【００４９】図１４、１５は、本発明の通訳サービスを多段で実現する例を示したものである。例えば、窓口２０３では、日本語と外国語Ｂの通訳を必要としているものとする。このとき、ネットワーク上には、日本語と外国語Ｂの直接的な通訳サービスは実在しないものとする。また、通訳サービスセンタ３０３は、外国語Ａと外国語Ｂとを通訳可能だが、日本語には対応できないものとする。さらに、通訳サービスセンタ３０４は、日本語と外国語Ａとを通訳可能だが、外国語Bには対応できないものとする。

【００５０】通訳サービスセンタ３０３は、窓口２０３より、日本語の音声を受信した場合には、そのまま、通信先制御装置３９を操作して、受信時に蓄積した日本語を通訳サービスセンタ３０４に転送する（ステップ１０５１，１０５２）。通訳サービスセンタ３０４は、日本語の音声を受信した場合には、外国語Ａに通訳して、通訳サービスセンタ３０３に返送する（ステップ１０５３）。通訳サービスセンタ３０３は、通訳サービスセンタ３０４より、外国語Aを受信した場合には、外国語Ｂに通訳して、通信先制御装置３９を操作して、窓口２０３に返送する（ステップ１０５４）。

【００５１】逆に、通訳サービスセンタ３０３は、窓口２０３より、外国語Bの音声を受信した場合には、外国語Ａに通訳して、通信先制御装置３９を操作して、外国語Aを通訳サービスセンタ３０４に転送する（ステップ１０５５）。通訳サービスセンタ３０４は、外国語Aの音声を受信した場合には、日本語に通訳して、通訳サービスセンタ３０３に返送する（ステップ１０５６）。通訳サービスセンタ３０３は、通訳サービスセンタ３０４より、日本語を受信した場合には、そのまま、受信時に蓄積した日本語を、通信先制御装置３９を操作して、窓口２０３に返送する（ステップ１０５７，１０５８）。

【００５２】もう一方の例は、通訳サービスセンタ３０５は、日本語と外国語Ａとを通訳可能だが、外国語Bには対応できないものとする。さらに、通訳サービスセンタ３０６は、外国語Ａと外国語Ｂとを通訳可能だが、日本語には対応できないものとする。

【００５３】この例では、中間の通訳サービスセンタ３０５の処理関係が先の例と異なることを示したものであり、本質的な部分には変わりがないので詳細な説明を割愛する。

【００５４】以上により、窓口２自身には物理的に通訳者がいなく、かつ、ネットワーク１上に提供されている通訳者による通訳サービスには、直接的な通訳が存在しない場合でも、間接的に通訳サービスを受けることが可能となる。多段による通訳サービスは、通訳サービス品質の劣化が多少あるが、全体的なサポートすべき通訳の種類を減らすことにもつながる。例えば、全世界（言語数Ｎ）で直接的通訳サービスを実施するものとすると、（Ｎ－１）！種類の通訳が必要となるが、間接的な通訳サービスを実施することにすれば、最小で（Ｎ－１）種類の通訳があれば良い。

【００５５】なお、多段通訳サービスは、直接的な通訳サービスが存在しない場合だけでなく、直接的な通訳サービスに空きがないときで、急ぎで対応したいときにも利用可能である。

【００５６】これまでの発明は、言語間の通訳サービスを実現するものであったが、以下では、手話通訳サービスについて説明する。

【００５７】図１６は、本発明の手話通訳サービスを実現するシステムを示したものである。窓口６と手話通訳サービスセンタ７のそれぞれのシステムは、ネットワーク１で接続されている。

【００５８】窓口６のシステムは、マイク６４、スピーカ６５，カメラ６６、及び、モニタ６７、音声処理装置６２、画像処理装置６８、送受信装置６１、サービス要求装置６３を有している。画像処理装置６８は、カメラ６６が撮影した映像をデジタルデータに変換する機能と、デジタルデータから映像に変換してモニタ６７から出力する機能をもつ装置である。

【００５９】手話通訳サービスセンタ７のシステムは、マイク７４、スピーカ７５，カメラ７６、及び、モニタ７７、音声処理装置７２、画像処理装置７８、送受信装置７１、サービス要求装置７３を有している。画像処理装置７８は、カメラ７６が撮影した映像をデジタルデータに変換する機能と、デジタルデータから映像に変換してモニタ７７から出力する機能をもつ装置である。

【００６０】図１７は、手話通訳サービスを受けるための基本的な流れをしめしたものである。手話通訳を必要とする人１１２が窓口６を訪れ、担当者１１１と交渉などを行いたい場合、まず、サービス要求装置２３を用いて、手話通訳サービスを受けたい旨要求を出す（ステップ１０７１）。この要求は送受信装置６１，７１、ネットワーク１を介して手話通訳サービスセンタに送られ（ステップ１０７２）、サービス要求確認装置７３に音やランプなどによって、通訳者１１３に要求が通知される。次に、通訳者１１３は、要求を受ける場合、サービス要求確認装置３３を用いて、通訳サービスを提供する旨応答を返す（ステップ１０７６、１０７７）。これらやりとりが正常に行われると、送受信装置６１，７１との間で論理的なコネクションが確立して（ステップ１０７３）、手話通訳サービス中となる。この状態は、サー

ビス要求装置７３によって、手話通訳サービス終了要求がでるまで続き、終了要求があったときには（ステップ１０７４）、コネクションを切断する（ステップ１０７５）。

【００６１】手話通訳サービス中（ステップ１０７８）は、通訳者１１３は、担当者１１１より音声を受信したい場合には、カメラ７６に向かって、手話への通訳を行う。この映像は映像処理装置７８によってデジタルデータに変換され、送受信装置７１，６１、ネットワーク１を介して窓口６に送られ、画像認識装置６８では、受信したデジタルデータから映像を合成し、モニタ６７に映像出力する。逆に、手話通訳を必要とする人１１２から手話による映像を見た場合には、マイク７４に向かって、音声への通訳を行う。この音声は音声処理装置７２によってデジタルデータに変換され、送受信装置７１，６１、ネットワーク１を介して窓口６に送られ、画像認識装置６２では、受信したデジタルデータから音声を合成し、スピーカ６５に音声出力する。

【００６２】以上により、窓口６自身には物理的に手話通訳者がいなくても手話通訳を必要とする人１１２の訪問があったときに、ネットワーク１上で提供されている手話通訳者１１３による手話通訳サービスを受けることが可能となる。また、例えば、ネットワーク１としてインターネット網を利用することで、手話通訳サービスに関わる通信コストを下げることが可能となる。

【００６３】以上が本発明の通訳サービスを説明するものであるが、実際には、ネットワークの通信品質とセキュリティを確保する必要がある。

【００６４】図１８は、ネットワークの通信品質とセキュリティを確保するためのシステム構成例を示したものである。ネットワークノードのルータ２００１は、ポリシーサーバ２００２が定めるポリシーによって制御され、ネットワーク上の通信品質（帯域や優先度など）が保証される。通信品質を保証する技術としては、ＤｉｆＳｅｒｖなどによる方法がある。これは、通信パケットにルータでの処理方法を指定する情報を挿入し、ルータではその情報に従ってポリシーにより制御するものである。

【００６５】ファイアウォール２００３は、ネットワーク上のいずれかからシステムに対して不正な侵入を防ぐ。侵入を防ぐ技術としては、パケットフィルタなどによる方法がある。これは、パケットの送受信アドレスやサービスの種類に従って、アクセス制御するものである。さらに、ネットワーク上の通信データ（例えば、個人情報や手話の映像など）を盗聴から守る場合には暗号化通信を行う。暗号化通信を行う技術には、バーチャルプライベートネットワーク技術がある。これは、相互のファイアウォール間で暗号化通信を行うものである。

【００６６】本実施の形態では、通訳サービスを実現するものとして説明したが、サービス提供者が人で、かつ、この人が仲介の役割をしているものであれば、全てにおいて応用することが可能である。また、本発明では、通訳を必要とする担当者と外国人が、物理的に同じ窓口にいるものとしたが、この両者がネットワークを介して物理的に離れていても良い。その場合には、通訳サービスセンタには、多段サービスの説明で示したように通信先制御装置が必要になる。

【００６７】本実施の形態によれば、窓口自身には物理的に通訳者がいなくても外国人の訪問があったときに、ネットワーク上で提供されている通訳者による通訳サービスを受けることが可能となる。また、例えば、ネットワークとしてインターネット網を利用することで、通訳サービスに関わる通信コストを下げることが可能となり、また、通訳サービスセンタそのものが外国にあっても容易にサービス提供することができる。

【００６８】本実施の形態によれば、ネットワーク上で提供されている通訳サービスの中から、必要な外国語の通訳サービスを提供し、かつ、通訳サービスが提供可能な状態にあるものを、選択することが可能となる。また、通訳者側も複数の外国語に対応できる場合もそのことが適切に対処される。さらに、通訳サービスの提供者が特定のところに偏ることなく適切に分散されることが可能となる。

【００６９】本実施の形態によれば、通訳者は、固定の通訳サービスセンタ以外でもどこからでもサービスを提供することができる。

【００７０】本実施の形態によれば、通訳者が、通訳サービスを提供中に、他から割り込まれることなく、継続的にサービスを続行することができる。

【００７１】本実施の形態によれば、求者が必要とする外国語の通訳サービスが全て「サービス中」である場合も、適切に利用の順番待ちが可能となる。また、通訳サービス提供者側も１つの「サービス」を終了した時点で、またすぐに次のサービスを行うことが可能であり、効率が良い。

【００７２】本実施の形態によれば、管理センタと契約を結んでいる通訳サービスセンタや、窓口のみ（以下、契約者）が通訳サービスの恩恵を受けることができる。また、契約者に限定することで通訳サービスの品質を一定以上のレベルに保つことができる。さらに、契約者の不正や品質劣化が認められたときに該当する契約者を容易に排除することができる。さらに、電子認証は窓口利用者から利用料を徴収したり、通訳サービス提供者に利用料を支払うときの根拠として役に立つ。

【００７３】本実施の形態によれば、ネットワーク上に提供されている通訳者による通訳サービスには、直接的な通訳が存在しない場合でも、間接的に通訳サービスを受けることが可能となる。多段による通訳サービスは、通訳サービス品質の劣化が多少あるが、全体的なサポートすべき通訳の種類を減らすことにもつながる。例え

ば、全世界（言語数Ｎ）で直接的通訳サービスを実施するものとすると、（Ｎ－１）！種類の通訳が必要となるが、間接的な通訳サービスを実施することにすれば、最小で（Ｎ－１）種類の通訳があれば良い。

【００７４】本実施の形態によれば、窓口自身には物理的に手話通訳者がいなくても手話通訳を必要とする人の訪問があったときに、ネットワーク上で提供されている手話通訳者による手話通訳サービスを受けることが可能となる。また、例えば、ネットワークとしてインターネット網を利用することで、手話通訳サービスに関わる通信コストを下げることが可能となる。

【００７５】

【発明の効果】本発明によれば、ネットワーク上でより効率よく翻訳サービスを実現できるとの効果がある。

【図面の簡単な説明】

【図１】通訳者による通訳サービスの基本構成を示す図である。

【図２】通訳者による通訳サービスの基本フローを示す図である。

【図３】通訳サービスの登録管理を行う基本構成を示す図である。

【図４】登録管理される情報の一部を示す図である。

【図５】登録管理の基本フローを示す図である。

【図６】適切なサービス提供者と接続を行う基本フローを示す図である。

【図７】通訳者による移動型通訳サービスの基本構成を示す図である。

【図８】排他処理の説明する図である。

＊【図９】通訳サービスの待ち行例への格納の基本フローを示す図である。

【図１０】待ち行例から通訳サービスへの移行の基本フローを示す図である。

【図１１】待ち行列の情報の一部を示す図である。

【図１２】通信相手の認証を行う基本構成を示す図である。

【図１３】通訳者による多段通訳サービスを行う基本構成を示す図である。

【図１４】通訳者による多段通訳サービスの説明を示す図である。

【図１５】通訳者による多段通訳サービスの説明するための図である。

【図１６】手話通訳者による手話通訳サービスを行う基本構成を示す図である。

【図１７】手話通訳者による手話通訳サービスの基本フローを示す図である。

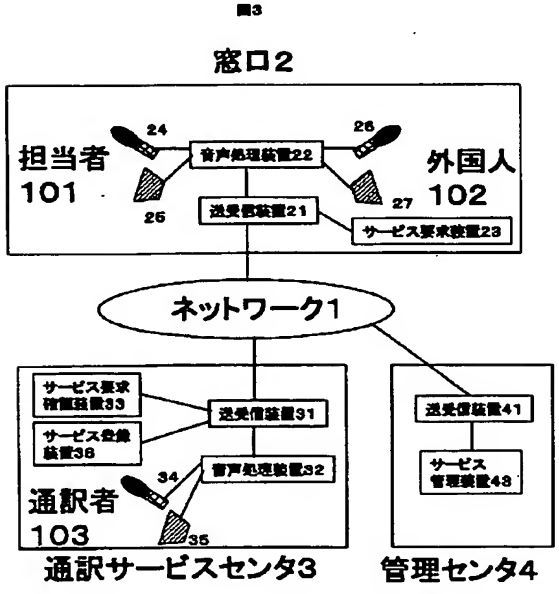
【図１８】セキュリティ、通信品質を確保するための構成例を示す図である。

【符号の説明】

１…ネットワーク、２、６…窓口、３、７…通訳サービスセンタ、４…管理センタ、２２、３２、４２、６２、７２…音声処理装置、６８、７８…画像処理装置、２３…サービス要求装置、３３…サービス要求確認装置、３６…サービス登録装置、４３…サービス管理装置、２８、３８…署名装置、４８…利用者検証装置、３９…通信先制御装置

＊

【図３】



【図４】

図４

外国語２００１	通訳サービス提供者２００２	状態２００３
英語	URL1	サービス中
英語	URL15（複数対応）	サービス中
英語	URL19	待機中
英語	URL25	停止中
フランス語	URL3	サービス中
フランス語	URL15（複数対応）	サービス中
フランス語	URL22	待機中
中国語	URL2	待機中
中国語	URL17	サービス中

【図１１】

図１１

外国語２０１１	通訳サービス待ち者２０１２	優先順位２０１３
英語	URL99	1
英語	URL61	2
英語	URL26	3
英語	URL109	4＜待ち行列に追加＞
フランス語	－	－
中国語	URL88	1
中国語	URL11	2

【図１】

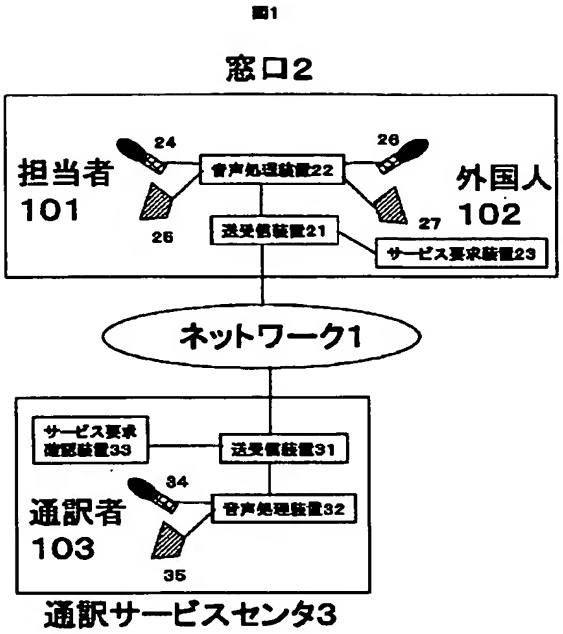


図1
窓口2
担当者
101
24
音声処理装置22
26
外国人
102
25
送受信装置21
27
サービス要求装置23
ネットワーク1
サービス要求
確認装置33
送受信装置31
34
通訳者
103
音声処理装置32
35
通訳サービスセンタ3

【図２】

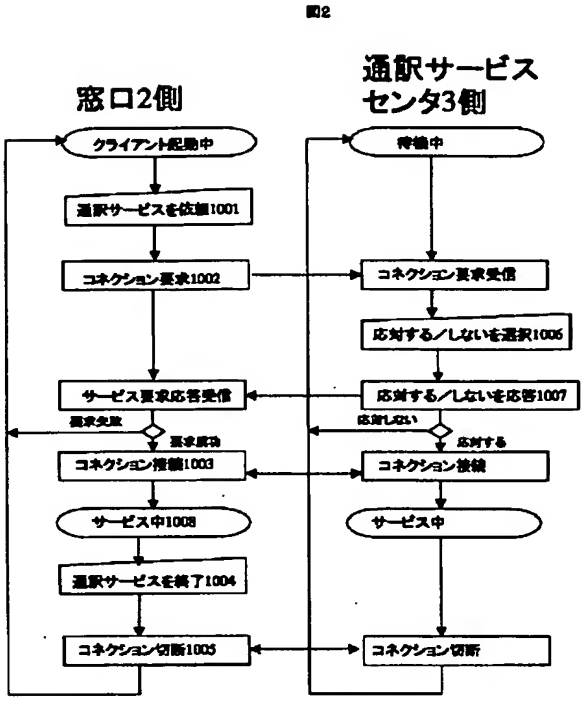


図2
窓口2側
通訳サービス
センタ3側
クライアント起動中
通訳サービスを依頼1001
コネクション要求1002
サービス要求応答受信
要求失敗
要求成功
コネクション確認1003
サービス中1008
通訳サービスを終了1004
コネクション切断1005
待機中
コネクション要求受信
応対する／しないを選択1006
応対する／しないを応答1007
応対しない
応対する
コネクション接続
サービス中
コネクション切断

【図５】

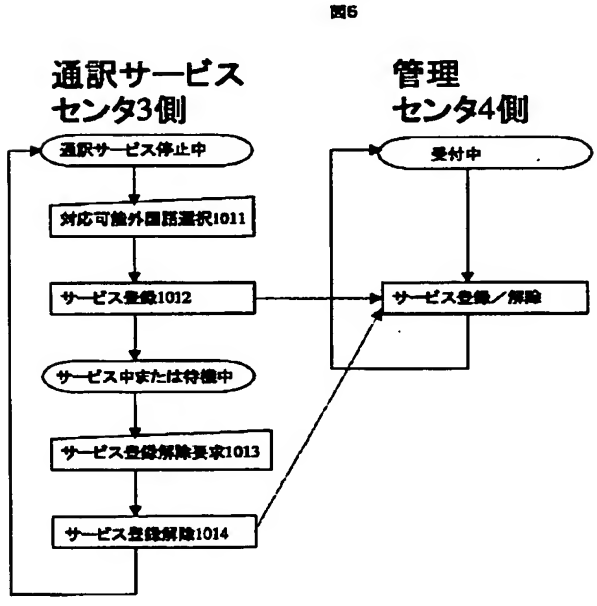


図5
通訳サービス
センタ3側
管理
センタ4側
通訳サービス停止中
対応可能外国語選択1011
サービス登録1012
サービス中または待機中
サービス登録解除要求1013
サービス登録解除1014
受付中
サービス登録／解除

【図６】

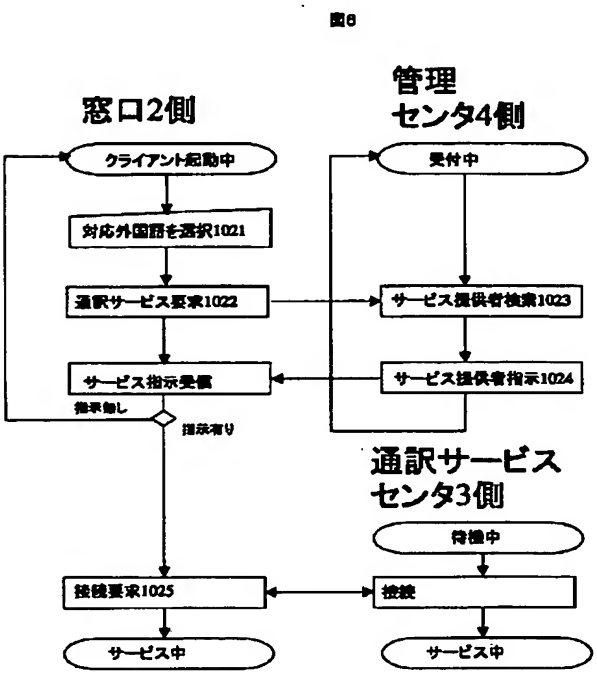
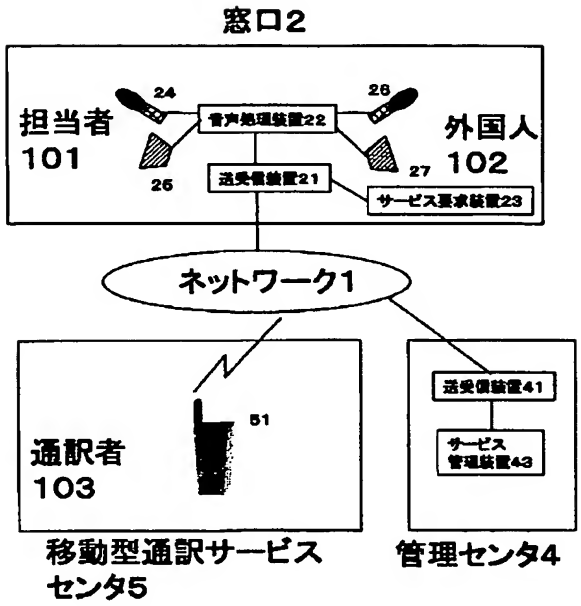


図6
窓口2側
管理
センタ4側
クライアント起動中
対応外国語を選択1021
通訳サービス要求1022
サービス指示受信
指示無し
指示有り
接続要求1025
サービス中
受付中
サービス提供者検索1023
サービス提供者指示1024
通訳サービス
センタ3側
待機中
接続
サービス中

【図７】

図7



【図８】

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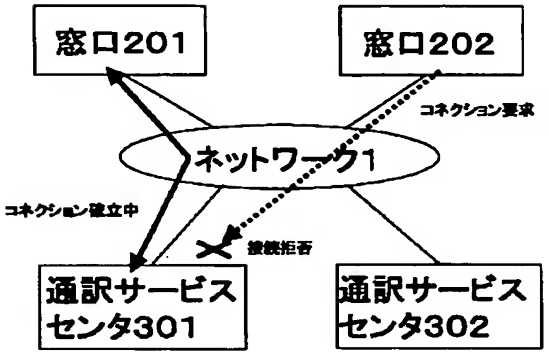

【図９】

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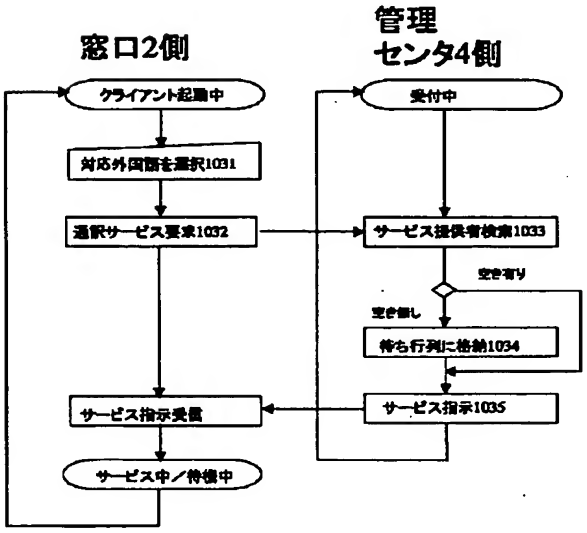
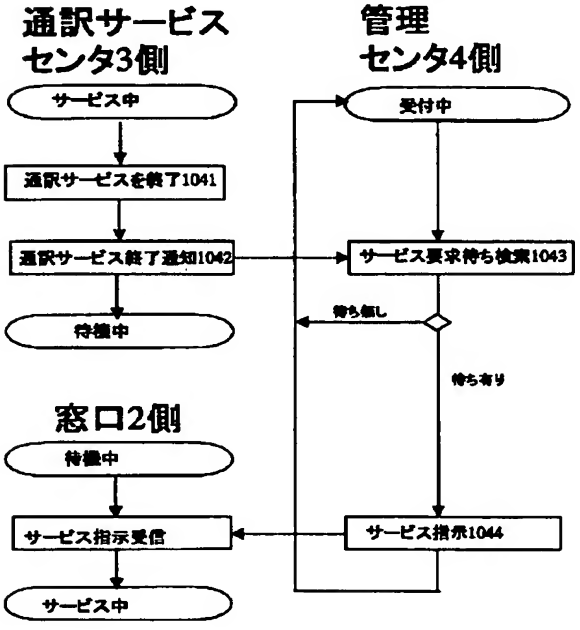


【図１０】

図10



【図１２】

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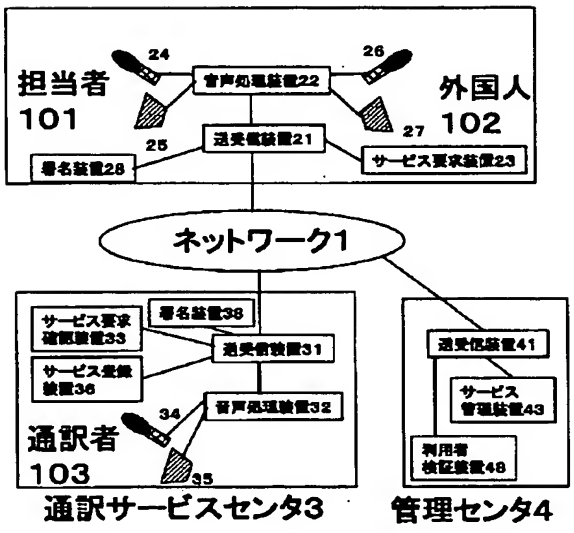

【図１３】

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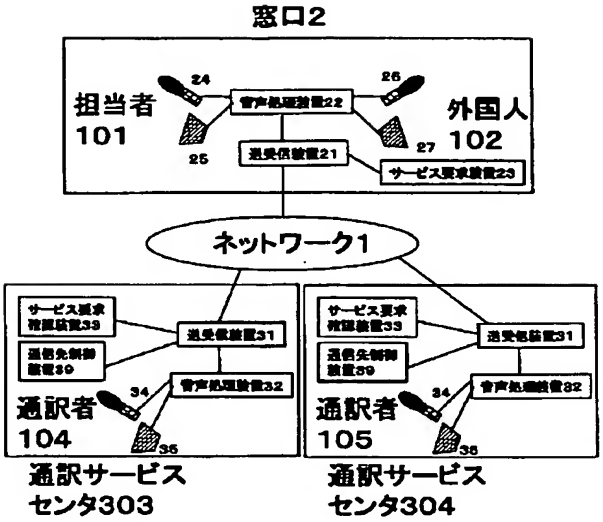

【図１４】

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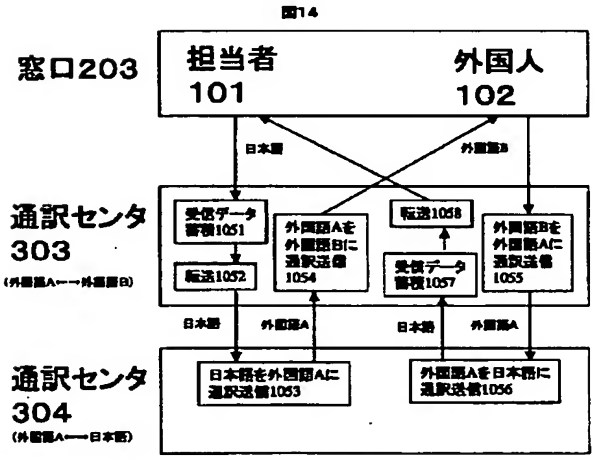

【図１５】

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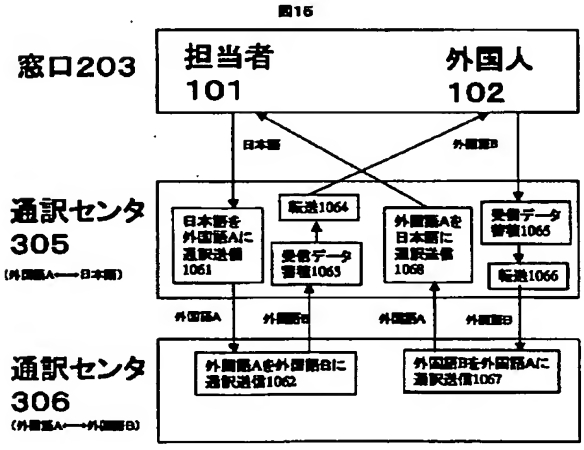

【図１６】

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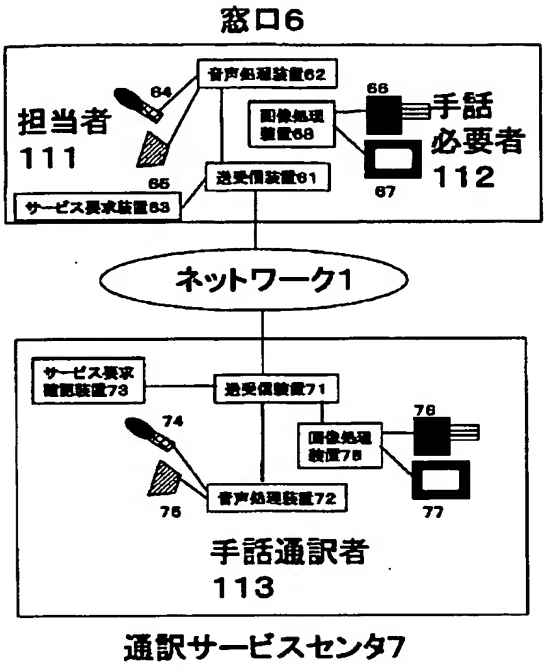
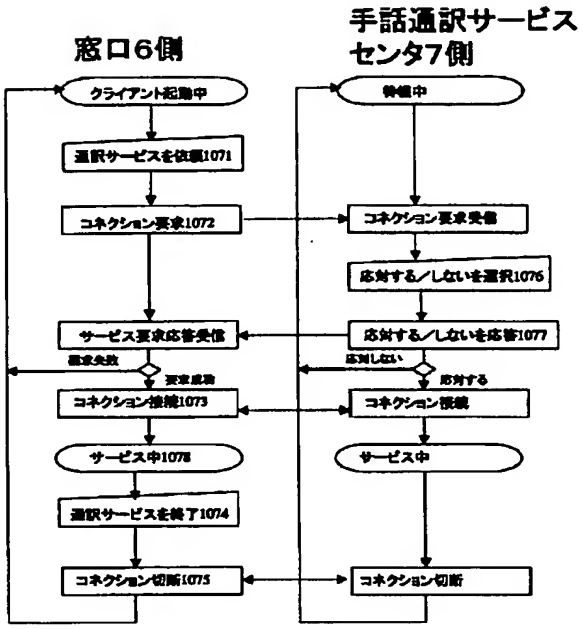


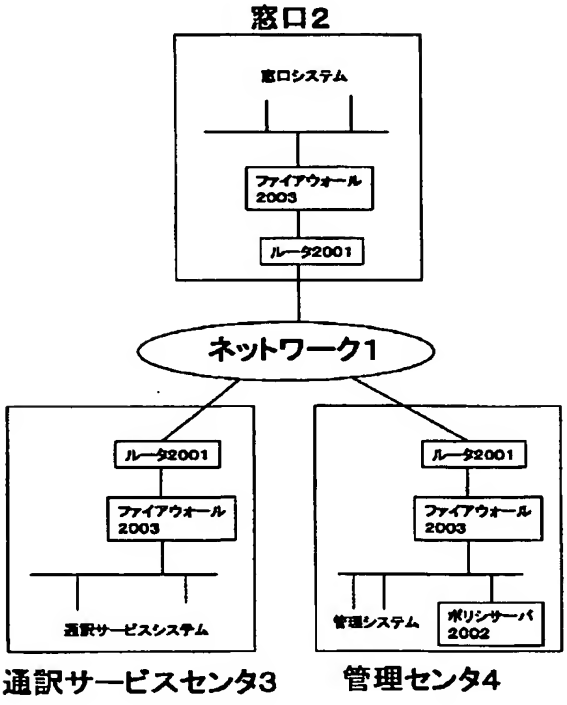
【図１７】

図17



【図１８】

図18



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Ｆターム(参考)　5B091 AA03 BA03 CB12 CB32 CD03
5D045 AB03 AB24 AB26
5K015 AB02 AF09
5K024 AA71 CC02 CC07 CC10 EE09
FF04 GG01 GG03

CLAIMS

[Claim(s)]
[Claim 1] In the interpreter system to which the user equipment which the user who needs interpreter service uses, and the translator equipment connected with said user equipment through the network were connected The demand information which requires the language identification information and the interpreter who show one [at least] language for which said user equipment needs an interpreter through said network is transmitted. Said translator equipment is based on the interpreter provided information which shows the language which can offer interpreter service using the translator equipment concerned, and said language identification information. When judged with the interpreter about the language which said language identification information shows being possible Information processing required in order to start the interpreter of the language which said language information shows is performed. The language information on language that said user equipment needs said said interpreter for said translator equipment through said network is transmitted. The interpreter service system with which said translator equipment is characterized by transmitting the language information for which the interpreter was performed to said user equipment to said language information through said network.
[Claim 2] It is the interpreter service system characterized by being the information said interpreter provided information indicates the existence of the translator who can perform an interpreter to be in an interpreter service system according to claim 1 using said translator equipment.
[Claim 3] Said interpreter provided information is an interpreter service system characterized by including the information which shows whether it is engaged in the interpreter of others [set to an interpreter service system according to claim 2, and / translator /

said].
[Claim 4] The interpreter service system characterized by having the storage which stored said interpreter provided information in an interpreter service system according to claim 1, and having further management equipment which is connected to said network and judges whether said interpreter is possible.
[Claim 5] The interpreter service system characterized by determining the translator equipment which it connects with two or more translator equipments, and said management equipment stores the information which matched the language which can be interpreted, and said each of two or more interpreter equipment as said interpreter provided information, and performs information processing for an interpreter based on said interpreter provided information as said network in an interpreter service system according to claim 4.
[Claim 6] The interpreter service system characterized by containing at least one side in said language information among speech information and sign language image information in an interpreter service system according to claim 1 to 5.
[Claim 7] It is the interpreter service system characterized by outputting two or more interpreted language information which said user equipment inputs the language information from two or more required users of an interpreter in an interpreter service system according to claim 1 to 6, and is transmitted from said translator equipment through said network.
[Claim 8] In the translator equipment connected through the user equipment and the network which the user who needs interpreter service uses A means to receive the demand information which requires the language identification information and the interpreter who show one [at least] language which is transmitted through said network from said user equipment, and which needs an interpreter, It is based on the interpreter provided information which shows the language which can offer interpreter service using the translator equipment concerned, and said language identification information. When judged with the interpreter about the language which said language identification information shows being possible A means to perform information processing required in order to start the interpreter of the language which said language information shows, A means to receive the language information on the language which needs said said interpreter transmitted through said network from said user equipment when information processing required in order to start said interpreter is performed, Translator equipment characterized by having a means to

transmit the language information for which the interpreter was performed to said user equipment to said language information through said network.

[Claim 9] It is translator equipment characterized by being the information said interpreter provided information indicates the existence of the translator who can perform an interpreter to be in translator equipment according to claim 8 using said translator equipment.

[Claim 10] Said interpreter provided information is translator equipment characterized by including the information which shows whether it is engaged in the interpreter of others [set to translator equipment according to claim 9, and / translator / said].

[Claim 11] Translator equipment characterized by having further the storage which stored said interpreter provided information in translator equipment according to claim 8.

[Claim 12] Translator equipment characterized by containing at least one side in said language information among speech information and sign language image information in translator equipment according to claim 8 to 11.

[Claim 13] A means a means to receive the language information from said user equipment receives two or more language information that it was inputted with said user equipment, in translator equipment according to claim 8 to 12, and transmit said interpreted information is translator equipment characterized by transmitting two or more language information interpreted to said each of two or more language information.

[Claim 14] In the interpreter service management equipment connected through two or more translator equipments and the network which the translator who offers the user equipment which the user who needs interpreter service uses, and said interpreter service uses A means to store the interpreter provided information which matched the language which can be interpreted, and said each of two or more interpreter equipment, A means to receive the demand information which requires the language identification information and the interpreter who show one [at least] language which is transmitted through said network from said user equipment, and which needs an interpreter, A means to specify the translator equipment which can offer the interpreter service about the language which said language identification information shows based on said interpreter provided information and said language identification information, Interpreter service management equipment characterized by having a means to perform information processing for realizing interpreter service to said specified user equipment from said

translator equipment.
[Claim 15] A means to perform information processing for realizing said interpreter service in interpreter service management equipment according to claim 14 is interpreter service management equipment characterized by transmitting the information which specifies said translator equipment specified as said user equipment.
[Claim 16] A means perform information processing for realizing said interpreter service in interpreter service management equipment according to claim 14 is interpreter service management equipment characterized by to transmit the information which specifies the contents of translation service demanded from the information which specifies said user equipment as said specified translator equipment, and said user equipment.
[Claim 17] Interpreter service management equipment characterized by containing at least one side in said language information among speech information and sign language image information in interpreter service management equipment according to claim 14 to 16.

[Translation done.]

* NOTICES *

JPO and NCIPI are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the information processing for realizing interpreter service on the real time by the translator.
[0002]
[Description of the Prior Art] The callers from overseas are increasing in number in connection with public transport progressing. However, when Japan is taken for an example, it is that the foreigner who the foreign

country which makes Japanese the official language does not have, and visits Japan is poor at the R/W in Japanese, and conversation in most cases. On the contrary, even when Japanese people visit in a foreign country, the official language of a spot cannot necessarily be mastered. In such a situation, among the foreigners who cannot understand language mutually, in order to perform negotiation, a business talk, a contract, dealings, guidance, etc., there are not few cases where a translation and an interpreter are needed.

[0003] However, from cost, the lack of a well-qualified person, etc., although acted as whom, neither a translator nor a translator can always be accompanied, accompanied and prepared. Furthermore, about the ability to respond to all various foreign languages, it is still more so.

[0004] Although there is interpreter service (JP,2000-112939,A) using automatic translation equipment (for example, JP,2000-207398,A), and an electronic dictionary (for example, JP,2000-194701,A) and a voice recognition unit etc. in a Prior art, all are mainly concerned with interpreter / translation processing by the computer, and cannot say easily that it is the high quality service which the translator and the translator were offering conventionally. However, an Internet related technique and especially the translation service with the high quality in off-line that I send [service] a document to a translator electronically and has a translation result answer the translator by development of an electronic mail or a WWW technique are obtained increasingly easily.

[0005]

[Problem(s) to be Solved by the Invention] The technical problem of this invention is easily obtained by real time in the interpreter service with the high quality by the translator using a network network. It is in public responsibility offering interpreter service especially at the window (windows, such as a city office, an administrative body and alternation, a bank, and a means of transportation) where it is high and the use frequency by the foreigner is also high.

[0006] The technical problems of others of this invention are it being able to respond, also when a connection's being able to take easily with the interpreter service provider which can respond, the exclusive operation under service being possible, attaining the whole increase in efficiency by schedule management, offer of only a just contractor being performed, and a direct interpreter do not exist, interpreter service being offered but, and applying also to sign-language interpreting, moving.

[0007]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, the following configurations are taken in this invention. The equipment or the translator who can perform the interpreter demanded from the terminal unit which the user who wishes to act as interpreter uses is specified, and the specified equipment or the translator performs the information processing for an interpreter, or the interpreter itself.

[0008] In a detail, the configuration as follows is taken more. The window where the person in charge and the foreigner who cannot take communication with the same language directly in order that real time may obtain easily the interpreter service with the high quality by the translator using a network network exist, and the interpreter service center where the translator who can perform the interpreter of language exists connect in the network where audio data flow, and prepare a microphone, a loudspeaker, a speech processing unit, and a transmitter-receiver for a window and an interpreter service center. Furthermore, the channel between a window and an interpreter service center is established to a demand ********* case, and audio data are transmitted [service request check equipment is given to a window in service request equipment and an interpreter service center, a person in charge or a foreigner demands interpreter service using service request equipment, and it answers / whether a translator accepts a demand using service request check equipment, and /, and] to it and received mutually.

[0009] In order that a connection may enable it to take easily with the interpreter service provider which can respond, the management center which manages the information on an interpreter service provider, the contents of offer, and an offer condition is connected, at the time of a service request, first, it asks here and the directions of an interpreter service provider which can respond are received from a window.

[0010] In order that the exclusive operation under service may make it possible, the server of an interpreter service center prevents from sticking two or more windows and a logical connection on coincidence.

[0011] In order to attain the whole increase in efficiency by schedule management, as soon as it manages the queue of a window and there is a notice of service termination from an interpreter service center in the management center, a window is assigned out of a queue and interpreter service is offered.

[0012] In order to enable it to offer only a just contractor, it attests whether a communications partner is a just contractor using the

principle of an electronic authentication technique.
[0013] Since it enables it to correspond also when a direct interpreter does not exist, an interpreter service center is carried out in multistage and it transmits by performing the interpreter to other language in a middle interpreter service center if needed.
[0014] In order to enable it to offer interpreter service but, moving, a cellular phone and a personal digital assistant are used as an interpreter service center, and the destination which changes during migration is managed in the management center.
[0015] In order to apply also to sign-language interpreting, a camera, a monitor, and an image processing system are given to a window and an interpreter service center, and it enables it to perform transmission and reception of voice and image data.
[0016]
[Embodiment of the Invention] Drawing 1 shows the system which realizes interpreter service of this invention. Each system of a window 2 and the interpreter service center 3 is connected in the network 1. In addition, as a window 2, all are applicable to the place which a foreigner may visit like windows, such as a conference room of a public office, alternation, a tourist information center, a means of transportation, a convenience store, a bank, a store, and a company.
[0017] The system of a window 2 has microphones 24 and 26 and loudspeakers 25 and 27, a speech processing unit 22, a transmitter-receiver 21, and service request equipment 23. A speech processing unit 22 is equipment with the function to change into digital data the sound which microphones 24 and 26 collected, and the function which changes into a sound from digital data and is outputted from loudspeakers 25 and 27. Service request equipment 23 is equipment for requiring initiation and termination of interpreter service, or carrying out the selection demand of the foreign language. A transmitter-receiver 21 is equipment which transmits and receives data among other transmitter-receivers 31 on a network 1.
[0018] The system of the interpreter service center 3 has a microphone 34 and a loudspeaker 35, a speech processing unit 32, a transmitter-receiver 31, and service request check equipment 33. A speech processing unit 32 is equipment with the function to change into digital data the sound which the microphone 34 collected, and the function which changes into a sound from digital data and is outputted from a loudspeaker 35. Service request check equipment 33 is equipment for returning the response of whether to receive a demand, when the initiation demand of interpreter service comes. A transmitter-receiver 31 is equipment which

transmits and receives data among other transmitter-receivers 21 on a network 1.

[0019] Drawing 2 shows the fundamental flow for receiving interpreter service. When the foreigner 102 who visited the window 2 wants to perform negotiation etc. with a person in charge 101, a purport demand to receive interpreter service is first advanced using service request equipment 23 (step 1001). This demand is sent to an interpreter service center through transmitter-receivers 21 and 31 and a network 1 (step 1002), and a translator 103 is informed of a demand by a sound, the lamp, etc. at service request check equipment 33. Next, a translator 103 returns the purport response which offers interpreter service using service request check equipment 33, when receiving a demand (steps 1006 and 1007). If these exchanges are performed normally, a logical connection will be established among transmitter-receivers 21 and 31 (step 1003), and it will become under interpreter service. this condition -- service request equipment 23 -- an interpreter service termination demand -- even coming out -- it continues, and when there is a termination demand, (step 1004) and a connection are cut (step 1005).

[0020] During interpreter service (step 1008), a sound is collected through microphones 24, 26, and 34, and the voice which the person in charge 101, the foreigner 102, and the translator 103 uttered is changed into digital data by speech processing units 22 and 32, and data communication is carried out to the other party through transmitter-receivers 21 and 31 and a network 1 with them. And with speech processing units 22 and 32, the received digital data is compounded by voice, and a voice output is carried out to loudspeakers 25, 27, and 35, and it gets across to a partner's man.

[0021] Even if a translator is not in window 2 self physically, when there is a visit of a foreigner 102 by the above, it becomes possible to receive the interpreter service by the translator 103 currently offered on the network 1. Moreover, even if it becomes possible to lower the communication link cost in connection with interpreter service and interpreter service center 3 itself is in a foreign country by using the Internet network as a network 1 for example, service provision can be carried out easily.

[0022] Drawing 3 is interpreter service of this invention, and shows the basis of registration reception of interpreter service, and the system to offer. The system of the management center 4 has service management equipment 43 and a transmitter-receiver 41. Service management equipment 43 has managed the foreign language 2001 which can be offered, the interpreter service provider (or interpreter service center) 2002 which

offers interpreter service, and the condition 2003 whether interpreter service is possible as it was shown in drawing 4 . Here, one interpreter service provider may be supporting two or more foreign languages. Moreover, there is "under a halt". [which cannot carry out "waiting" and service provision which are waiting for acceptance of service as a condition while / "while / service /" / actually carrying out current service now]

[0023] In the system of the interpreter service center 3, although explained using drawing 1 R> 1, otherwise, it has service registration equipment 36. Service registration equipment 36 is the class of interpreter service which can be offered, and equipment for registering whether it is in the condition that interpreter service can be offered. Drawing 5 shows the fundamental flow for registering interpreter service.

[0024] First, using service registration equipment 36, the translator 103 of an interpreter service center chooses the foreign language which can respond (step 1011) and performs service registration to start interpreter service (step 1012). The foreign language which can respond may be plural. This registration is sent to the management center 4 through transmitter-receivers 31 and 41 and a network 1, and the identifiers (or destination etc.) which express a service provider in service management equipment 43 as the foreign language which can respond, and a condition ("waiting") are registered. Registration cancellation is similarly performed using service registration equipment 36 to suspend interpreter service (steps 1013 and 1014). Drawing 6 looks for an interpreter service provider, and shows the fundamental flow for resulting "during service."

[0025] The foreigner 102 of a window 2 chooses the foreign language I want you to interpret using service request equipment 23 (step 1021), and advances a purport demand to receive interpreter service (step 1022). This demand is sent to the service management equipment 43 of the management center 4 through transmitter-receivers 21 and 41 and a network 1. Service management equipment searches with the foreign language in the contents of a demand what is "waiting" based on a fair polish (step 1023), and returns the identifier (or destination) of an interpreter service provider as a retrieval result (step 1024). Service request equipment 23 will advance a purport demand to receive interpreter service in the service provider shown in the retrieval result further, if this retrieval result is received (step 1025). This demand is sent to the service request check equipment 33 of the interpreter service center 3 through transmitter-receivers 21 and 31 and a network 1. Hereafter, it becomes "under service" through the procedure

same with having explained using drawing 2 .
[0026] In addition, the service management equipment 43 of the management center 4 is told having come during interpreter service from the service request check equipment 23 of a window 2, or the service request check equipment 33 of the interpreter service center 3, and although service management equipment corresponds, it makes a condition "under service." When one interpreter service center supports two or more foreign languages, all the conditions of the corresponding interpreter service center are made into "under service." In addition, the usual employment is told from the service request check equipment 33 of the interpreter service center 3.
[0027] the condition "under service" -- the service request equipment 23 of a window 2 -- an interpreter service termination demand -- even coming out, when it continues and there is a termination demand That the connection of the transmitter-receivers 21 and 31 of a window 2 and the interpreter service center 3 was cut, and service was completed From the service request check equipment 23 of a window 2, or the service request check equipment 33 of the interpreter service center 3, it is told to the service management equipment 43 of the management center 4, and although service management equipment corresponds, it makes a condition "waiting." In addition, the usual employment is told from the service request check equipment 33 of the interpreter service center 3.
[0028] Even if there is no translator at the window 2, when there is a visit of a foreigner by the above, it becomes possible to choose the thing in the condition that interpreter service of a required foreign language can be offered out of the interpreter service currently offered on the network, and interpreter service can be offered. Moreover, a translator side and also when it can respond to two or more foreign languages, that is coped with appropriately. Furthermore, it becomes possible to distribute appropriately, without inclining at the place which is specification [the provider of interpreter service].
[0029] In addition, although carried out to every foreign language in the above-mentioned example, a specific special field of study may be added and managed, and a service request may be performed. For example, they are "English of a law speciality", "the French of an economic speciality", etc. If this level is applied, the interpreter service included to the technical term also becomes possible, and still higher quality service can be expected.
[0030] Drawing 7 is interpreter service of this invention, and shows the system which offers the interpreter service from a migration place. The system of the interpreter service center 5 has the cellular phone in

which a network 1 and connection are possible, or the personal digital assistant 51. A voice message (or voice input/output) is possible for this cellular phone and a personal digital assistant. Moreover, service request check and service registration can be performed by operating appropriately the carbon button of a cellular phone, and the keyboard of a personal digital assistant. Moreover, when a cellular phone and a personal digital assistant have the demand of service, a translator 103 is told by means, such as a sound, and a lamp, vibration. Moreover, as the identifier and the destination of a cellular phone or a personal digital assistant, the telephone number, a mobile IP, a dynamic domain name, etc. are used.

[0031] In addition, a system can also be similarly constituted about a window with the cellular phone in which a network 1 and connection are possible, or a personal digital assistant.

[0032] By the above, a translator can offer service even from where also except the interpreter service center of immobilization.

[0033] Drawing 8 shows the exclusive operation of interpreter service of this invention. When the interpreter service center 301 and a window 201 establish a logical connection and have become "under service", connection is refused even if there is a connection connection request from other windows 202 to the interpreter service center 301. This is realizable by the server ability by the side of an interpreter service center preventing from establishing two or more connections.

[0034] By the above, service can be continued continuously, without interrupting him from others, while a translator offers interpreter service.

[0035] Drawing 9 and 10 show schedule pipe ** of the interpreter service provider of this invention.

[0036] The foreigner 102 of a window 2 chooses the foreign language I want you to interpret using service request equipment 23 (step 1031), and advances a purport demand to receive interpreter service (step 1032). This demand is sent to the service management equipment 43 of the management center 4 through transmitter-receivers 21 and 41 and a network 1. what is "waiting" in the foreign language which service management equipment has in the contents of a demand -- a fair polish -- being based -- searching (step 1033) -- this demand is stored in the queue of the waiting for a service request when there is nothing that is "waiting" (step 1034). Usually, as shown in drawing 11 R> 1, it puts into the backmost row of waiting for service 2012 for every foreign language 2011. And the purport and claimant included in a queue are returned (step 1035). Now, a user goes into a waiting state.

[0037] If the service equipment of the management center 4 receives the notice of service termination from the interpreter service center of arbitration If it checks whether a claimant is in a queue to the corresponding foreign language (it is all the foreign language of them when an interpreter service provider can respond to two or more foreign languages) (step 1043) and the claimant of waiting is The highest claimant of waiting of priority is chosen according to a polish, and the identifier (or destination) of the interpreter service provider which ended service is returned to the window of the claimant of waiting (step 1044). The service request equipment 23 of a window 2 will become "under service" through the procedure same with having explained using drawing 2 , if this result is received.

[0038] Also when all interpreter services of the foreign language which a claimant needs "are giving their service" by the above, the turn waiting of use becomes possible appropriately. Moreover, it is possible to offer the next service immediately, when the interpreter service provider side also ended one "service", and it is efficient.

[0039] Drawing 12 shows the system about the interpreter service center of this invention, or authentication of a window.

[0040] The management center 4 offers the information which shows that he is a just user, or data to a just interpreter service center or a just user. Here, information or data points to ID, a password, and the private key used by the public key cryptosystem. In the case of a private key, it is desirable to be stored in a medium with high safety like an IC card. Hereafter, it explains by the approach of verifying a just user, using a public key cryptosystem.

[0041] The management center 4 has user verification equipment 48. User verification equipment publishes a challenge code as the partner who wants to verify, or verifies the signature to a challenge code. The signature of a challenge code is verified with a user's public key. The management center 4 shall obtain a user's public key safely.

[0042] The interpreter service center 3 and the window 2 have the signature equipments 28 and 38. Signature equipment carries out electronic signature to the challenge code shown from the management center using each private key. At this time, it checks that he is a just user using the principle of an electronic authentication.

[0043] The principle of an electronic authentication is user verification equipment 48 of the management center 4 in the timing which needs a check of a just user. the partner (a window 2 --) who wants to generate and verify a random challenge code To the interpreter service center 3, or delivery, signature equipment 28 of the partner who wants

to verify, Or it checks whether it is in agreement with a challenge code 38 with the private key of the partner who wants to verify by having the electronic signature to a challenge code carried out, having a letter answered, and decrypting electronic signature using the public key of the partner who wants to verify with user verification equipment 48.

[0044] The above-mentioned procedure may explain the general principle of an electronic authentication, and may use the principle of other electronic authentications. By the above, the management center 4 can attest the user of a window 2 or the interpreter service center 3.

[0045] Although the above-mentioned procedure explained authentication of the window 2 by the management center 4, or authentication of the interpreter service center 3 by the management center 4, it can also apply the mutual recognition between a window 2 and the interpreter service center 3 to authentication of this hard flow 4, i.e., the management center by the window 2, or authentication of the management center 4 by the interpreter service center 3, and a pan.

[0046] By the above, (the following and a contractor) can receive the benefit of interpreter service only for the interpreter service center 3 who has contracted the contract with the management center 4, and a window 2. Moreover, the quality of interpreter service can be maintained at the level more than fixed by limiting to a contractor. Furthermore, the contractor who corresponds when a contractor's injustice and quality degradation are accepted can be eliminated easily. Furthermore, an electronic authentication is helpful as a basis at the time of collecting the charge of use from a window user, or paying the charge of use to an interpreter service provider.

[0047] Drawing 13 shows the system which realizes interpreter service of this invention multistage. Each system of a window 203 and the interpreter service centers 303 and 304 is connected in the network 1.

[0048] The system of the interpreter service center 303 has communication link initiative equipment 39 other than a microphone 34 and a loudspeaker 35, a speech processing unit 32, a transmitter-receiver 31, and service request check equipment 33. Communication link initiative equipment 39 is equipment with the function which controls a communication link place by actuation of a carbon button etc., and the function which accumulates commo data temporarily.

[0049] Drawing 14 and 15 show the example which realizes interpreter service of this invention multistage. For example, the interpreter of Japanese and a foreign language B shall be needed at the window 203. At this time, direct interpreter service of Japanese and a foreign language B shall not exist really on a network. Moreover, although the

interpreter service center 303 can interpret a foreign language A and a foreign language B, it shall not respond to Japanese. Furthermore, although the interpreter service center 304 can interpret Japanese and a foreign language A, it shall not respond to a foreign language B.

[0050] From a window 203, when Japanese voice is received, as it is, the interpreter service center 303 operates communication link initiative equipment 39, and transmits Japanese accumulated at the time of reception to the interpreter service center 304 (steps 1051 and 1052). When Japanese voice is received, the interpreter service center 304 is interpreted into a foreign language A, and is returned to the interpreter service center 303 (step 1053). From the interpreter service center 304, when a foreign language A is received, the interpreter service center 303 is interpreted into a foreign language B, operates communication link initiative equipment 39, and returns it to a window 203 (step 1054).

[0051] On the contrary, from a window 203, when the voice of a foreign language B is received, the interpreter service center 303 acts as interpreter into a foreign language A, operates communication link initiative equipment 39, and transmits a foreign language A to the interpreter service center 304 (step 1055). When the voice of a foreign language A is received, the interpreter service center 304 is interpreted in Japanese, and is returned to the interpreter service center 303 (step 1056). From the interpreter service center 304, when Japanese is received, as it is, the interpreter service center 303 operates communication link initiative equipment 39, and returns Japanese accumulated at the time of reception to a window 203 (steps 1057 and 1058).

[0052] Another example shall not respond to a foreign language B, although the interpreter service center 305 can interpret Japanese and a foreign language A. Furthermore, although the interpreter service center 306 can interpret a foreign language A and a foreign language B, it shall not respond to Japanese.

[0053] In this example, it is shown that the processing relation of the middle interpreter service center 305 differs from a previous example, and since there is no change in an essential part, detailed explanation is omitted.

[0054] Even when a direct interpreter does not exist in interpreter service by the translator who a translator is not in window 2 self physically, and is offered on the network 1 by the above, it becomes possible to receive interpreter service indirectly. Although the interpreter service by multistage has some degradation of an interpreter

quality of service, it leads also to reducing the class of overall interpreter who should support. If direct interpreter service shall be carried out all over the world (several language N) (N-1) Although the interpreter of a class is needed, if indirect interpreter service will be carried out, there should just be an interpreter of a class (N-1) by min.!

[0055] in addition, not only when direct interpreter service does not exist but multistage interpreter service is available to hurry, come out and correspond to direct interpreter service in the time of there being no opening.

[0056] Although old invention realized interpreter service between language, below, it explains sign-language interpreting service.

[0057] Drawing 16 shows the system which realizes sign-language interpreting service of this invention. Each system of a window 6 and the sign-language interpreting service center 7 is connected in the network 1.

[0058] The system of a window 6 has a microphone 64, a loudspeaker 65, a camera 66 and a monitor 67, a speech processing unit 62, an image processing system 68, a transmitter-receiver 61, and service request equipment 63. An image processing system 68 is equipment with the function to change into digital data the image which the camera 66 photoed, and the function which changes into an image from digital data and is outputted from a monitor 67.

[0059] The system of the sign-language interpreting service center 7 has a microphone 74, a loudspeaker 75, a camera 76 and a monitor 77, a speech processing unit 72, an image processing system 78, a transmitter-receiver 71, and service request equipment 73. An image processing system 78 is equipment with the function to change into digital data the image which the camera 76 photoed, and the function which changes into an image from digital data and is outputted from a monitor 77.

[0060] Drawing 17 shows the fundamental flow for receiving sign-language interpreting service. When those [112] who need sign-language interpreting want to visit a window 6 and to perform negotiation etc. with a person in charge 111, a purport demand to receive sign-language interpreting service is first advanced using service request equipment 23 (step 1071). This demand is sent to a sign-language interpreting service center through transmitter-receivers 61 and 71 and a network 1 (step 1072), and a translator 113 is informed of a demand by a sound, the lamp, etc. at service request check equipment 73. Next, a translator 113 returns the purport response which offers interpreter service using service request check equipment 33, when receiving a demand (steps 1076

and 1077). If these exchanges are performed normally, a logical connection will be established among transmitter-receivers 61 and 71 (step 1073), and it will become under sign-language interpreting service. this condition -- service request equipment 73 -- a sign-language interpreting service termination demand -- even coming out -- it continues, and when there is a termination demand, (step 1074) and a connection are cut (step 1075).

[0061] During sign-language interpreting service (step 1078), a translator 113 performs the interpreter to sign language toward a camera 76 to receive voice from a person in charge 111. With the image processor 78, this image is changed into digital data and sent to a window 6 through transmitter-receivers 71 and 61 and a network 1, and with image recognition equipment 68, it compounds an image from the received digital data, and it carries out a video output to a monitor 67. On the contrary, when the image by sign language is seen from those [112] who need sign-language interpreting, the interpreter to voice is performed toward a microphone 74. With a speech processing unit 72, this voice is changed into digital data and sent to a window 6 through transmitter-receivers 71 and 61 and a network 1, and with image recognition equipment 62, it compounds voice from the received digital data, and it carries out a voice output to a loudspeaker 65.

[0062] When there is a visit of those [112] who need sign-language interpreting by the above even if a sign-language interpreting person is not in window 6 self physically, it becomes possible to receive the sign-language interpreting service by the sign-language interpreting person 113 currently offered on the network 1. Moreover, it becomes possible to, lower the communication link cost in connection with sign-language interpreting service by using the Internet network as a network 1 for example.

[0063] Although the above explains interpreter service of this invention, it is necessary to secure network communication link quality and security in fact.

[0064] Drawing 18 shows the example of a system configuration for securing network communication link quality and security. The router 2001 of a network node is controlled by the policy which the policy server 2002 defines, and the communication link quality on a network (a band, priority, etc.) is guaranteed. There is an approach by DiffServ etc. as a technique of guaranteeing communication link quality. This inserts the information which specifies the art in a router as a communication link packet, and controls it by the router by the policy according to the information.

[0065] A fire wall 2003 protects an unjust invasion from either on a network to a system. There is an approach by a packet filter etc. as a technique which prevents invasion. The access control of this is carried out according to the transceiver address of a packet, or the class of service. Furthermore, in protecting the commo data on a network (for example, individual humanity news, the image of sign language, etc.) from tapping, it performs an encryption communication link. There is a virtual ply peat network technique among the techniques of performing an encryption communication link. This performs an encryption communication link between mutual fire walls.

[0066] Although the gestalt of this operation explained as what realizes interpreter service, a service provider is a man, and if this man is doing the mediatory role, applying in all is possible. Moreover, although the person in charge and foreigner who need an interpreter shall be in the same window physically in this invention, these both may be physically separated through the network. In that case, as explanation of multistage service showed, communication link initiative equipment is needed for an interpreter service center.

[0067] Even if a translator is not in the window itself physically, when there is a visit of a foreigner according to the gestalt of this operation, it becomes possible to receive the interpreter service by the translator currently offered on the network. Moreover, even if it becomes possible to lower the communication link cost in connection with interpreter service and the interpreter service center itself is located by using the Internet network as a network for example, in a foreign country, service provision can be carried out easily.

[0068] According to the gestalt of this operation, it becomes possible to choose the thing in the condition that interpreter service of a required foreign language can be offered out of the interpreter service currently offered on the network, and interpreter service can be offered. Moreover, a translator side and also when it can respond to two or more foreign languages, that is coped with appropriately. Furthermore, it becomes possible to distribute appropriately, without inclining at the place which is specification [the provider of interpreter service].

[0069] According to the gestalt of this operation, a translator can offer service even from where also except the interpreter service center of immobilization.

[0070] According to the gestalt of this operation, service can be continued continuously, without interrupting him from others, while a translator offers interpreter service.

[0071] Also when all interpreter services of the foreign language which

a ** person needs "are giving their service" according to the gestalt of this operation, the turn waiting of use becomes possible appropriately. Moreover, it is possible to offer the next service immediately, when the interpreter service provider side also ended one "service", and it is efficient.

[0072] According to the gestalt of this operation, (the following and a contractor) can receive the benefit of interpreter service only for the interpreter service center who has contracted the contract with the management center, and a window. Moreover, the quality of interpreter service can be maintained at the level more than fixed by limiting to a contractor. Furthermore, the contractor who corresponds when a contractor's injustice and quality degradation are accepted can be eliminated easily. Furthermore, an electronic authentication collects the charge of use from a window user, or is helpful as a basis when paying the charge of use to an interpreter service provider.

[0073] According to the gestalt of this operation, even when a direct interpreter does not exist in interpreter service by the translator currently offered on the network, it becomes possible to receive interpreter service indirectly. Although the interpreter service by multistage has some degradation of an interpreter quality of service, it leads also to reducing the class of overall interpreter who should support. If direct interpreter service shall be carried out all over the world (several language N) (N-1) Although the interpreter of a class is needed, if indirect interpreter service will be carried out, there should just be an interpreter of a class (N-1) by min.!

[0074] Even if a sign-language interpreting person is not in the window itself physically, when there is a visit of those who need sign-language interpreting according to the gestalt of this operation, it becomes possible to receive the sign-language interpreting service by the sign-language interpreting person currently offered on the network. Moreover, it becomes possible to, lower the communication link cost in connection with sign-language interpreting service by using the Internet network as a network for example.

[0075]

[Effect of the Invention] According to this invention, there is effectiveness that translation service can be more efficiently realized on a network.

[Translation done.]

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is drawing showing the basic configuration of the interpreter service by the translator.
[Drawing 2] It is drawing showing the basic flow of the interpreter service by the translator.
[Drawing 3] It is drawing showing the basic configuration which performs registration management of interpreter service.
[Drawing 4] It is drawing showing a part of information by which registration management is carried out.
[Drawing 5] It is drawing showing the basic flow of registration management.
[Drawing 6] It is drawing showing the basic flow linked to a suitable service provider.
[Drawing 7] It is drawing showing the basic configuration of the migration mold interpreter service by the translator.
[Drawing 8] It is drawing which an exclusive operation explains.
[Drawing 9] It is drawing showing the basic flow of storing in the example of a waiting line of interpreter service.
[Drawing 10] It is drawing showing the basic flow of the shift to the interpreter service from the example of a waiting line.
[Drawing 11] It is drawing showing a part of information on a queue.
[Drawing 12] It is drawing showing the basic configuration which attests a communications partner.
[Drawing 13] It is drawing showing the basic configuration which offers multistage interpreter service by the translator.
[Drawing 14] It is drawing showing explanation of the multistage interpreter service by the translator.
[Drawing 15] It is drawing for the multistage interpreter service by the translator to explain.

[Drawing 16] It is drawing showing the basic configuration which offers sign-language interpreting service by the sign-language interpreting person.
[Drawing 17] It is drawing showing the basic flow of the sign-language interpreting service by the sign-language interpreting person.
[Drawing 18] It is drawing showing the example of a configuration for securing security and communication link quality.
[Description of Notations]
1 [-- A management center, 22, 32, 42, 62, 72 / -- 68 A speech processing unit, 78 / -- An image processing system, 23 / -- Service request equipment, 33 / -- Service request check equipment, 36 / -- Service registration equipment, 43 / -- 28 Service management equipment, 38 / -- Signature equipment, 48 / -- User verification equipment, 39 / -- Communication link initiative equipment] -- 2 A network, 6 -- 3 A window, 7 -- An interpreter service center, 4

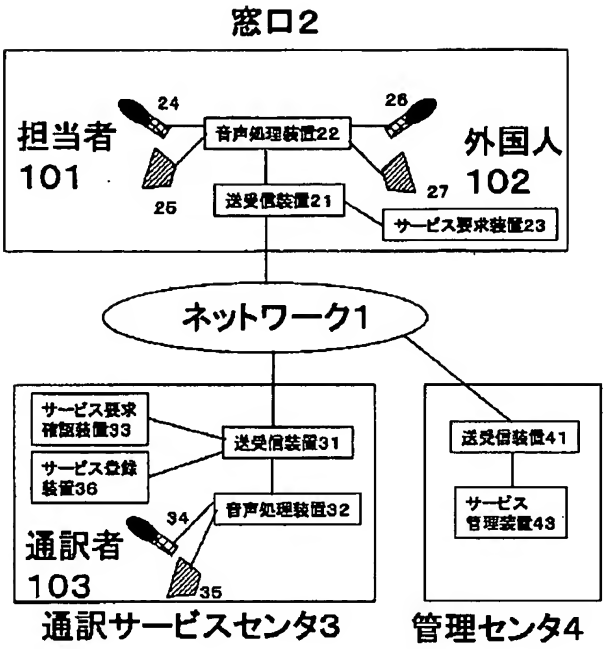
[Translation done.]

* NOTICES *

DRAWINGS

[Drawing 3]

図3



[Drawing 4]

図4

外国語２００１	通訳サービス提供者２００２	状態２００３
英語	URL1	サービス中
英語	URL15（複数対応）	サービス中
英語	URL19	待機中
英語	URL25	停止中
フランス語	URL3	サービス中
フランス語	URL15（複数対応）	サービス中
フランス語	URL22	待機中
中国語	URL2	待機中
中国語	URL17	サービス中

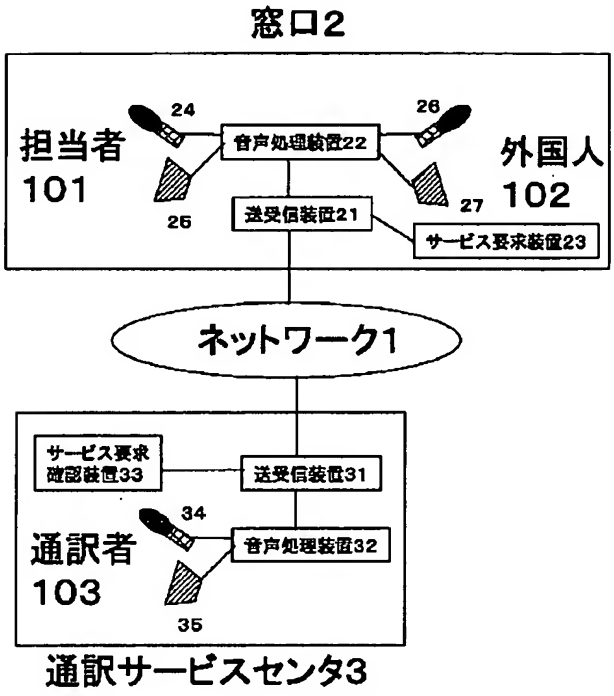
[Drawing 11]

図１１

外国語２０１１	通訳サービス待ち者２０１２	優先順位２０１３
英語	URL99	1
英語	URL51	2
英語	URL26	3
英語	URL109	4＜待ち行列に追加＞
フランス語	－	－
中国語	URL88	1
中国語	URL11	2

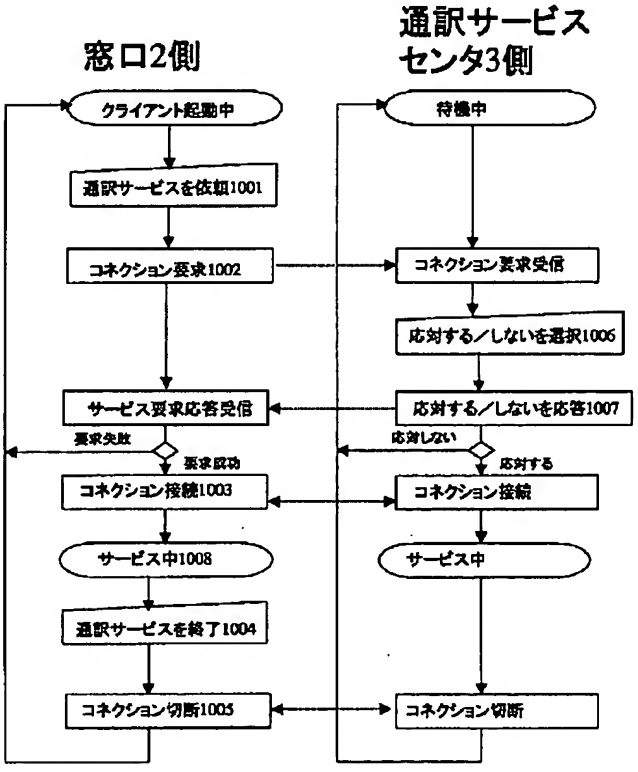
[Drawing 1]

図1



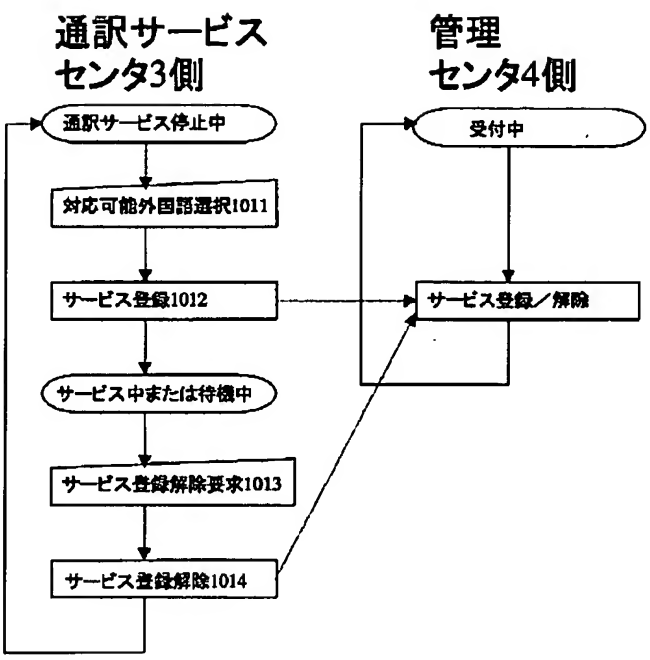
[Drawing 2]

図2



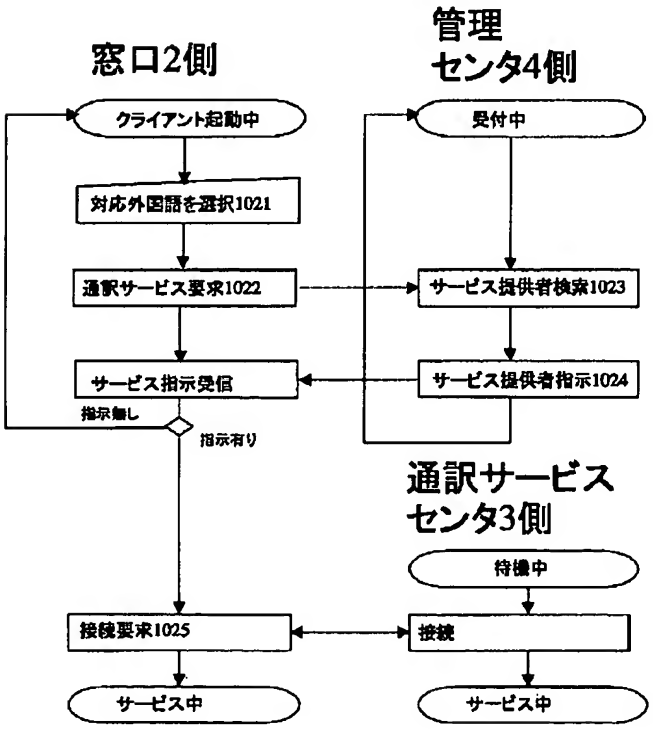
[Drawing 5]

図5



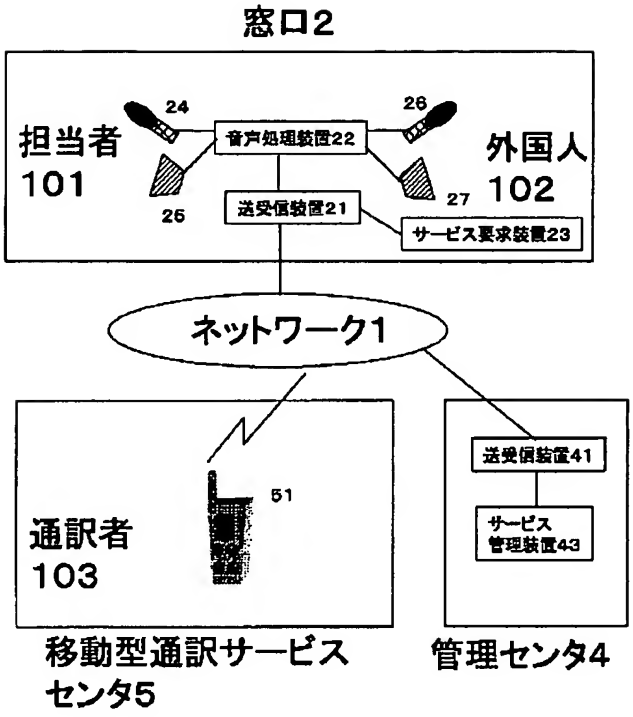
[Drawing 6]

図6



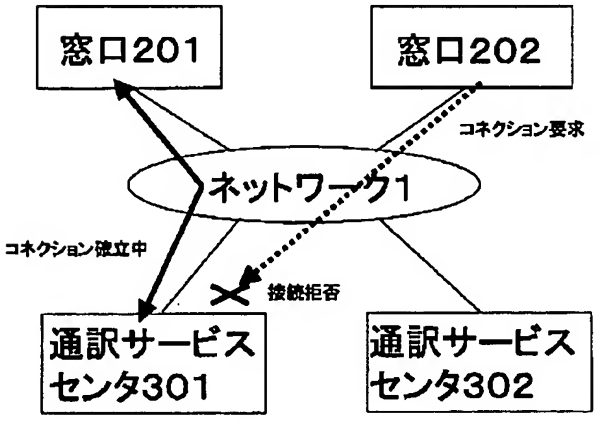
[Drawing 7]

図7



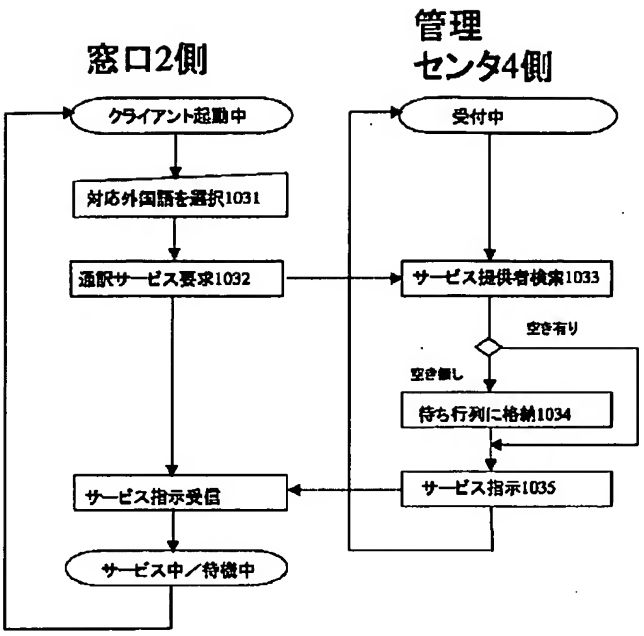
[Drawing 8]

図8



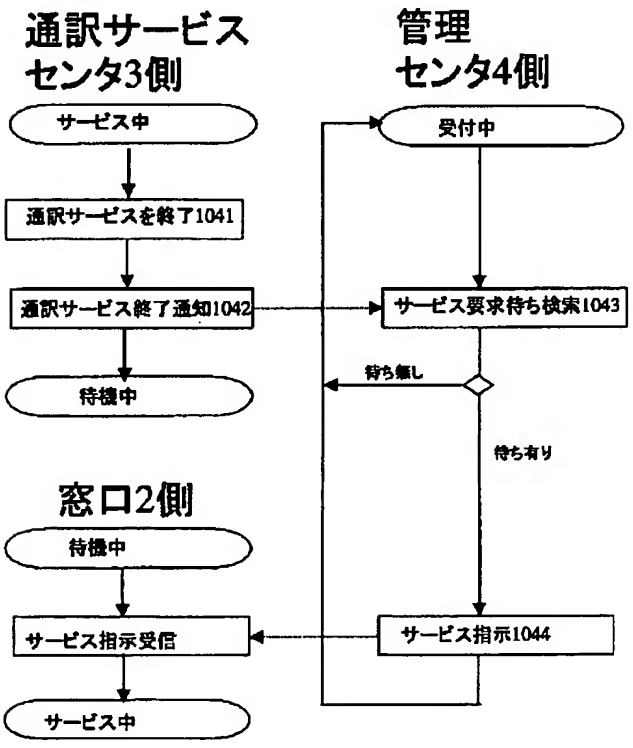
[Drawing 9]

図9



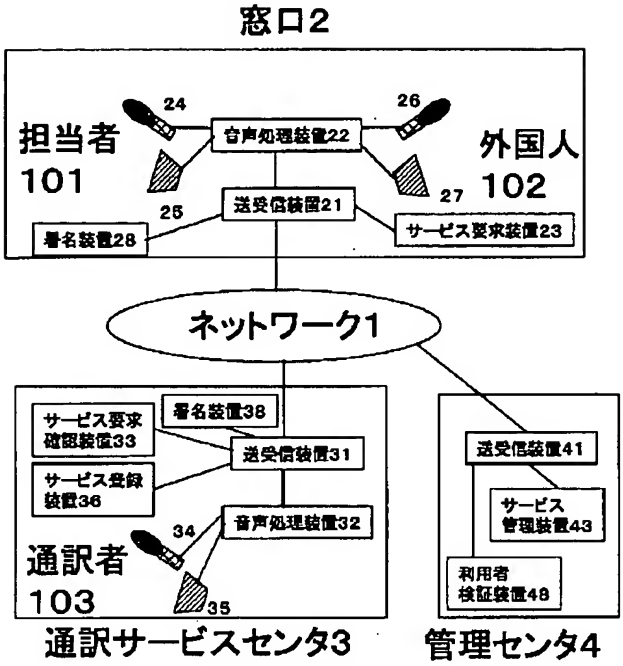
[Drawing 10]

図10



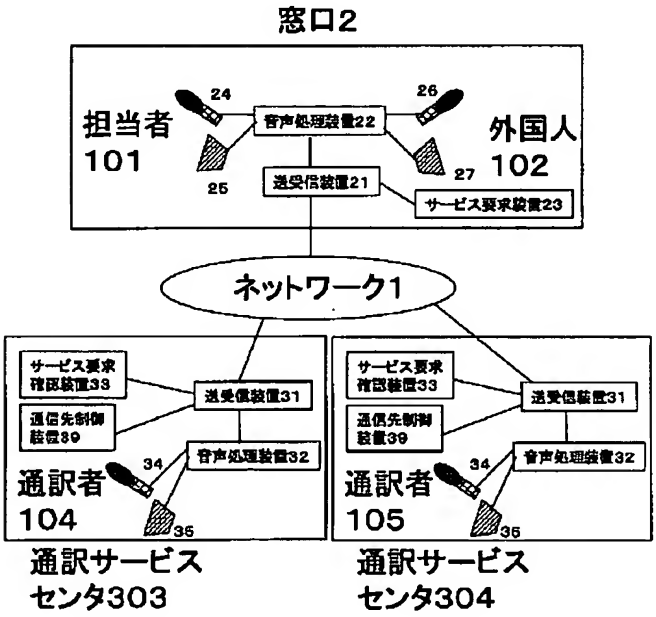
[Drawing 12]

図12



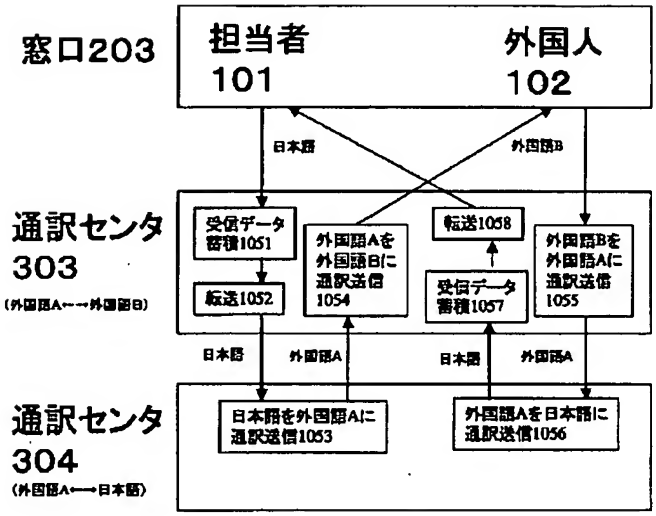
[Drawing 13]

図13



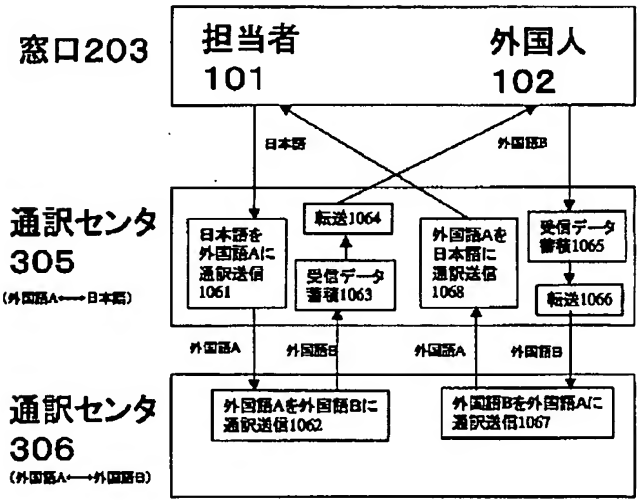
[Drawing 14]

図14



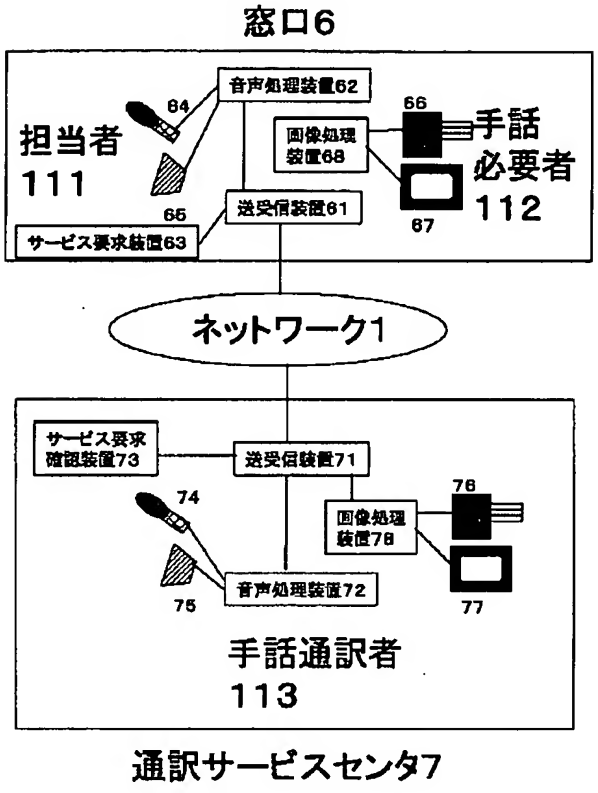
[Drawing 15]

図16



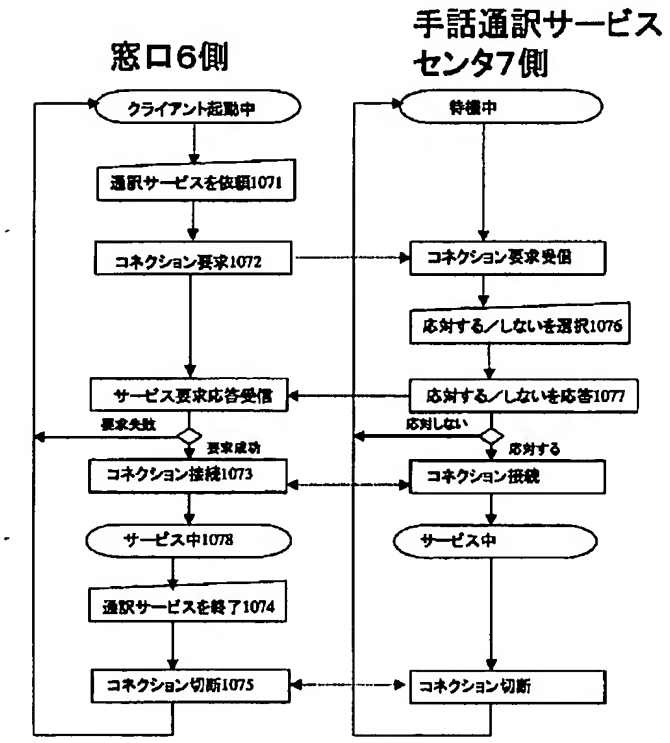
[Drawing 16]

図16



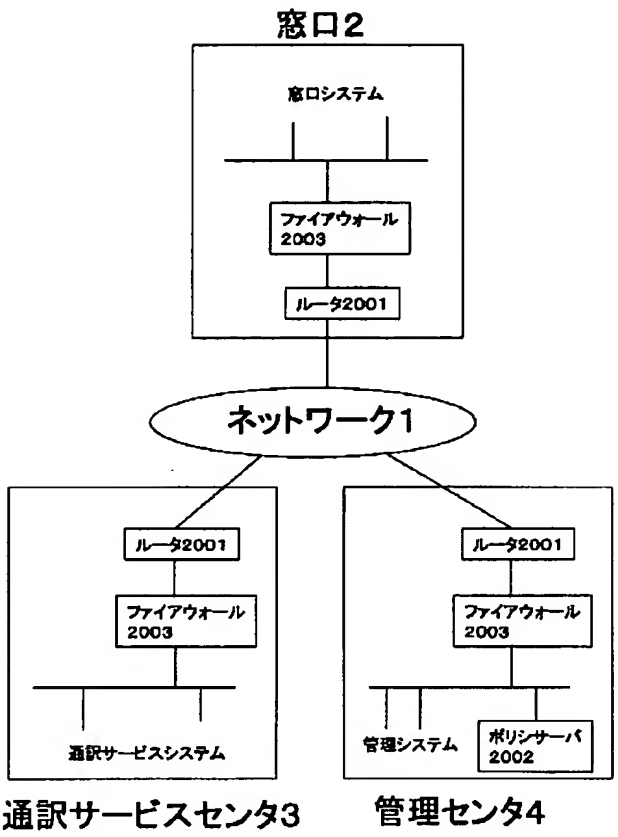
[Drawing 17]

図17



[Drawing 18]

図18



[Translation done.]

CLAIMS

[Claim(s)]

[Claim 1] The conversation between the important point translator who needs an interpreter, using Language NL, and the translator-ed who uses this important point translator's language NL used, and different language TL Are the system performed through a translator and an interpreter pin center,large intervenes between an important point translator and a translator-ed. With the server with which an important point translator has an interpreter pin center,large and the communication terminal which are transmitted and received, and an interpreter pin center,large transmits and receives Language NL and TL between an important point translator's communication terminals The interpreter system characterized by having the translator group which consists of one or more translators, and constituting the conversation between an important point translator and a translator-ed through the server concerned so that it may act as interpreter by the specified translator.

[Claim 2] A means to specify the important point translator who is the addresser who sent through the communication terminal as the server of said interpreter pin center,large, It has a means to choose the translator who can use an important point translator's specified language NL used. The selected translator is an interpreter system according to claim 1 characterized by specifying an usable translator for both language NL and TL also including self after contacting an

important point translator with the language NL concerned and checking a translator's-ed language TL used.

[Claim 3] The interpreter system according to claim 1 or 2 which a means to record the contents of the interpreted conversation, and a means to process the recorded contents of conversation as voice data or a document are formed in an interpreter pin center,large, and is characterized by an important point translator's thing which it responded for asking, and was constituted so that the contents of conversation of the important point translator concerned might be processed with a predetermined processing means.

[Claim 4] An interpreter system given in claim 1 thru/or any of 3 they are. [which carries out the description of having constituted so that the charge of an interpreter might be computed by a clock means being prepared for a server and considering calculation elements, such as registration existence to the class of the interpreter time amount measured by the clock means, and language NL and TL set as interpreter's object, and an important point translator's interpreter pin center,large,]

[Claim 5] The communication terminal which an important point translator possesses is an interpreter system given in claim 1 thru/or any of 4 they are. [which is characterized by being a cellular phone]

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] Especially this invention relates to the interpreter system which can be acted as interpreter, without those who act as interpreter being in the site of conversation which needs an interpreter about an interpreter system.

[0002]

[Description of the Prior Art] In traveling abroad, in the case of conversation with the foreigner from whom the language used differs at home depending on the case, Bahnung of a mutual intention is impossible or misunderstanding sometimes arises plentifully. When those from whom the language used differs need to talk by confronting each other directly, the most effective means at present is considering those who understand the language used of both who talk, respectively as an interpreter, and making them intervene between conversation.

[0003] In addition, the word of an "interpreter" has the semantics which shows the "action" in conversation which while translates and tells the language of the person of another side that a person's language is, and the meaning which shows "those" who performs this action. In order to make the written contents of the specification clear below, the word of an "interpreter" is made into the word which shows the above-mentioned "action", and is used, and those who perform "an interpreter" as an action decide to use the word of a "translator."

[0004] It has a large economic burden that those (it considers as an "important point translator" also including an example below) who need an interpreter in conversation make a translator always accompany although it will be satisfactory if a translator intervenes between conversation, and it is loss to carry out fixed time amount constraint of the translator by whom the number is restricted only for making a specific conversation interpret also for other persons who need an interpreter.

[0005]

[Problem(s) to be Solved by the Invention] From the above viewpoint, a mechanical means performs an interpreter or a translation and the equipment which displays the contents of a translation with a screen or voice, the system which translates many participants simultaneously, or the interpreter systems (JP,11-110388,A, JP,8-256114,A, JP,5-61399,A, etc.) which were constituted as study equipment of language are proposed. No these proposals are the equipment or the systems which serve as assistance at the time of constituting high performance and a comparatively large-scale translation, and an interpreter system, and needing special equipment, the compiler for KOPYUTA, large-scale communication system, etc., for example, talking by an individual taking a stand against a specific foreigner.

[0006]

[Means for Solving the Problem] Means of communications, such as a cellular phone which an important point translator owns as system ****** constituted in view of the trouble above-mentioned [this invention] so that the thing whose specific individual is the need, and for which an interpreter is received by the way might be possible, A means by which are the interpreter system which consisted of this means of communications, an interpreter pin center,large which are transmitted and received, and a translator stationed in this interpreter pin center,large, and an interpreter pin center,large checks an important point translator's language used, A means to check the other party's (it considers as "a translator-ed" below) language used it is supposed that an important point translator talks by interpreter, If it has the means which chooses the translator who understands the language used of an important point translator and a translator-ed and the translator concerned determines, it will be the interpreter system characterized by a translator interpreting the conversation of an important point translator and a translator-ed through said means of communications.

[0007]

[Embodiment of the Invention] The important point translator registers

beforehand the specific code which shows selves, such as an ID code, to the interpreter pin center,large. When the need for an interpreter arises, a self code is connected by means of communications (a "cellular phone" is explained to an example below). A translation pin center,large specifies the language used of the important point translator set up at the time of ID code registration, and chooses the translator who can use an important point translator's language used, and this translator connects it in that language used to an important point translator while it specifies an important point translator with this ID code. By question of a translator, an important point translator connects a translator's-ed language used.

[0008] Next, both language used of an important point translator and a translator-ed is set up as a translator of this conversation, and an important point translator and a translator-ed talk [in it] an usable translator through this translator with a cellular phone henceforth.

[0009]

[Example] Hereafter, a drawing is explained to reference for the example of this invention. The block diagram showing the system which drawing 1 requires for this invention, drawing 3 R> 3, and drawing 4 are the flow Figs: showing the example of activation of the system of this invention.

[0010] The system concerning this invention is first explained mainly using drawing 1 . This invention consists of interpreter pin center,larges 2 which act as interpreter according to the important point translator M1 who wants to use an interpreter system, the cellular phone 1 as means of communications which this important point translator M1 possesses, and the important point translator's M1 request. In addition, the translator M2-ed who is the partner who holds conversation with the important point translator M1 is the other party who performs this system, and is out of the structure of a system of this invention directly.

[0011] Usually, the important point translator M1 is the member of the interpreter pin center,large 2, registers an ID code to the interpreter pin center,large 2, and registers the self language NL used as "the language used / Japanese" at the

time of registration of a parenthesis. However, it is desirable to carry out a setup for which use of this interpreter pin center,large is possible also except the member beforehand registered so that it might mention later.

[0012] Next, the interpreter pin center,large 2 consists of a server 3 which controls the system of the interpreter pin center,large 2, and a translator group 4 which registered the language which can be interpreted. In addition, through the interpreter pin center,large 2, if the important point translator's M1 interpreter is possible for the translator group 4, it does not necessarily need to be standing by in the location in which the interpreter pin center,large 2 is installed.

[0013] an interpreter pin center,large is installed as much as possible in every country in the world on interpreter's essence -- having -- **** -- if things are desirable and there are many installation countries, the utility value of the part interpreter system will improve. That is, when the important point translator M1 stays at a foreign country, predetermined interpreter service can be received by connecting with the interpreter pin center,large of the country.

[0014] Next, a server's 3 configuration is explained with a server's function started by reception of the signal from the important point translator M1. Moreover, the important point translator 1 is a Japanese, and the language used is Japanese, and language other than Japanese explains to an example the case where it cannot be used. Moreover, registration explains to an example the case where it is carried out by the interpreter pin center,large currently installed in Japan.

[0015] The important point translator M1 shows the self language NL used to the interpreter pin center,large 2, and does ID registration. The interpreter pin center,large 2 registers the important point translator's M1 language NL used specified by this ID code while publishing an ID code to the important point translator M1. This ID code is given as a sign of a cosmopolitan to the thing MI which can carry out direct use, i.e., a specific important point translator, also in the interpreter pin center,large of each country. For this reason, if a self ID code is connected to the interpreter pin center,large of that country also in a foreign

country, the self language NL used will be specified and a translator's selection will be performed.

[0016] The need for an interpreter can consider the cases where the need for an interpreter is not known beforehand, such as a procedure at the case where he understands beforehand the need for an interpreter and its time amount, the language used, etc., and the time of the entry into and departure from the country in the airport of shopping in a foreign country, and a foreign country, like a specific meeting. The latter is first explained to an example for the configuration of this invention.

[0017] When the important point translator M1 senses the need for an interpreter, the interpreter pin center,large 2 is connected with with the cellular phone 1 which self owns, and a self ID code is transmitted. In addition, in the country, in being unusable, the interpreter pin center,large takes the cure of ******(ing) beforehand the mobile terminal in which the communication link with an interpreter pin center,large [in / in the cellular phone 1 which self owns when there is the important point translator M1 in addition to his own country / the country] is possible to the important point translator M1. Moreover, since the cellular-phone system which has a common communications protocol all over the world conversely at this application application time is not completed, when the important point translator M1 registers into the interpreter pin center,large 2 the exclusive mobile terminal in which the communication link with an interpreter pin center,large is possible in each country, you may deliver beforehand (loan). Hereafter, the terminal which the important point translator M1 owns explains to an example the case where it is a cellular phone.

[0018] The server 3 of the interpreter pin center,large 2 chooses this important point translator's M1 language NL used by NL selection means 3C while specifying the important point translator M1 by addresser specification means 3B based on the ID code outputted by the important point translator M1 through transceiver section 3A. In addition, when the important point translators M1 are not those who were registered beforehand, the important point translator M1

telephones an interpreter pin center,large, and 002 and English input 001 and, as for German, as for the code number corresponding to the self language used, for example, Japanese, 003 and French input KODO ** of the self language NL used like the 005th grade. In this case, the class of language used is outputted from transceiver section 3A as a direct code to NL selection means 3C.

[0019] In addition, in order for those who are not subscribers of the interpreter pin center,large 2 to use the interpreter pin center,large 2, what is strove for PR activities in everyday life is required for an interpreter pin center,large side. Moreover, it is desirable after use of the interpreter pin center,large 2 to perform PR activities of transmitting the mail which advertizes subscription in the interpreter pin center,large 2 to this cellular phone so that those who are not subscribers of the interpreter pin center,large 2 can use the interpreter pin center,large 2 cheaply in the future. Incidentally, the charge of use of the interpreter service by the non-subscriber of the interpreter pin center,large 2 is set up more highly than a subscriber.

[0020] If the important point translator's M1 language NL used is specified by NL selection means 3C, an usable translator will be chosen for this language NL used from the translator groups 4. In this case, for the whole also of each translator, the language which can be interpreted is registered and a server 3 narrows down a translator with this registration data. for example, the case where the important point translator's M1 language NL used is Japanese -- a translator -- carrying out -- when one of the language which can be interpreted is the translator A1 (Japanese, English, Italian) who is Japanese, for example, a translator, translator B-2 (English, German), and a translator C2 (German, Japanese, French), listen -- a translator A1 is chosen as those who can interpret ********. A translator A1 connects directly to the important point translator M1 through transceiver section 3A in the Japanese which is the important point translator's M1 language NL used.

[0021] The important point translator M1 who received direct communication from the translator A1 in Japanese connects the class TL of language which the

conversation partner (it considers as "a translator-ed" below) M2 uses to this translator A1. For example, when the translator's M2-ed language TL used is English, that is connected to a translator A1. As above-mentioned, since any language of NL (Japanese) and TL (English) is usable, a translator A1 will connect that he acts as interpreter, if there are time allowances. Moreover, when the translator's M2-ed language TL used is language outside a translator's A1 range, such as German, for example, the usable translator C2 is introduced [both] for language.

[0022] In addition, important point translator M1 self may not understand the translator's M2-ed language TL used in which language. In this case, it talks with a translator A1 through a cellular phone 1, a translator A1 specifies the translator's M2-ed language used by this conversation, and the translator M1-ed specifies translators including self. The path shown by the thick wire in drawing shows the path between the translator A1 when interpreter relation is materialized, and transceiver section 3A. Moreover, the path shown with an alternate long and short dash line shows the interpreter-related path materialized according to the class of language used.

[0023] If a translator is specified, conversation will be materialized between the important point translator M1 and the translator M2-ed through this translator. In addition, although conversation of the important point translator M1 who talks directly, and the translator M2-ed is held through the voice input section (microphone) of a cellular phone 1, since conversation needs to perform interpreter's need top important point translator M1 and translator M2-ed by turns, and to transmit them in a translator A1 clearly [the contents of conversation of the important point translator M1 and the translator M2-ed], it is desirable [conversation] to use the microphones 5a and 5b of dedication, respectively. Moreover, the voice output of the interpreter of the contents of an utterance of the important point translator M1 and the translator M2-ed is done by the translator A1 from the loudspeaker section 6.

[0024] Drawing 2 shows typically the conversation of the important point

translator M1 and the translator M2-ed, the translator A1 of the interpreter pin center,large 2 which intervenes among both, and relation. For example, if the important point translator M1 performs the first utterance NL 1 through microphone 5a of a cellular phone 1 As TL1 which used the translator's M-ed language TL used by the translator A1, these contents of an utterance It is outputted to the loudspeaker section 6 of a cellular phone 1, and the translator M2-ed who heard the contents of this loudspeaker section 6 performs the utterance TL 2 of the contents corresponding to TL1 through microphone 5b. Furthermore, a translator A1 does the voice output of the contents corresponding to TL2 from a loudspeaker 6 as NL2 using Language NL. Conversation is materialized between the important point translator M1 and the translator M2-ed through interpreter A1 by repeating this activity successively.

[0025] The contents of the conversation of the important point translator M1 and the translator M2-ed and the interpreter's of a translator's A1 contents are recorded as mentioned above by contents record means 3D of a communication link (refer to drawing 1), and it is recorded with the time-of-day data outputted from the clock means 3, the conversation time, i.e., the interpreter time amount, to conversation termination. Especially this time-of-day data is used for liquidation of interpreter costs. Sign 3F are a liquidation means. Liquidation means 3F compute interpreter costs by considering elements, such as registration existence to the class of interpreter time amount and language NL and TL used, and the important point translator's M1 interpreter pin center,large 2. With termination of interpreter service, the data of these interpreter costs are outputted to the important point translator's M1 cellular phone 1, or the claim of costs or the automatic accounts transfer of costs liquidates costs with a specification later.

[0026] Moreover, when the important point translator M1 needs to save the contents of conversation later, the important point translator M1 is provided with the contents of the conversation outputted from contents record means 3D of a communication link as the speech information which responded for asking, for

example, was recorded on the tape 7, or document record which created this as a document 8. These services can be offered for pay from the first. In addition, the signs 9 and 10 of drawing 2 are showing serially above-mentioned record and above-mentioned processing.

[0027] Drawing 3 shows as a flow the work habits mentioned above when the needs for an interpreter (interpreter's required time amount, interpreter's required language, etc.) have not become settled beforehand. The interpreter pin center,large 2 namely, the language NL used of the important point translator M1 who is an addresser of a cellular phone 1 first It checks from the data outputted as a direct use linguistic code from the self ID code which the important point translator M1 outputted (SA1). listen -- the translator who can speak the ****** language NL is chosen (SA2), this selected translator contacts a direct addresser using Language NL, and a translator does finding out from an addresser directly etc., and checks the translator's M2-ed language TL (SA3). Then, the translator concerned selects the translators including self who can speak both language NL and TL (SA4), connects the purport that the interpreter became possible to the important point translator M1 pair which is an operator (SA5), and advances an interpreter in the above-mentioned procedure (SA6).

[0028] Drawing 4 shows a flow when the above turns out that an interpreter is required on the contrary beforehand. As such an example, conversation with the visitor person (translator-ed) about a specific matter to whom it arranged and visitor time has become settled etc. can be considered, for example.

[0029] First, the important point translator M1 registers time registration (SB1) of the self language NL used and a translator's-ed language TL used and acting as interpreter to the interpreter pin center,large 2 (SB2). In this case, it checks whether the interpreter pin center,large 2 is involved in the special field of study of specification [the contents of conversation] to the translator M1-ed (SB3). This is a thing about specific technical fields, such as an arrangement about development of a new electronic instrument, or the conversation which needs an interpreter, for example Or when it is a thing about the specific art fields, such as

music, it is for choosing the deep translator of knowledge as the field as much as possible. When the conversation of such a specific field is expected, a detailed translator is listed in this field (SB4), out of it, those who can respond to the registered time of day are narrowed down, and a translator is specified (SB5).
[0030] In this condition, an interpreter is performed at the time of the scheduled day (SB6). In addition, in the conversation of the important point translator M1 and the translator M2-ed, when a document (data) is shown from the translator M2-ed and the important point translator M1 wants to know the outline of the contents of this document in this conversation, FAX (FAX will usually be carried out to the interpreter pin center,large 2) of this data is carried out to a translator, and these contents are examined (SB7, SB8, SB9). The translator who inquired connects the outline of this data to the important point translator M1. Thus, the important point translator M1 and the translator M2-ed talk through a translator.
[0031]
[Effect of the Invention] The interpreter using a specific translator besides interpreter software Speech recognition software, As opposed to being what generating software or document preparation software is needed, there are very many operational elements, they become what has a system expensive very on a large scale, moreover boils the interpreter's contents markedly at present as compared with the interpreter by the translator, and is inferior The translator who is in locations other than the address of an important point translator and a translator-ed through means of communications, such as a cellular phone, as above-mentioned according to this invention It becomes possible to interpret these both conversation, and it becomes possible to receive an interpreter by the low price if needed, without carrying out long duration monopoly of the translator who has specific skill.

[Translation done.]

* NOTICES *

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram of the interpreter pin center,large in which the example of this invention is shown.

[Drawing 2] It is the conceptual diagram of relation with which an important point translator and a translator-ed talk through an interpreter pin center,large.

[Drawing 3] It is the flow Fig. showing an example of activation of the system of this invention.

[Drawing 4] It is the flow Fig. showing other examples of activation of the system of this invention.

[Description of Notations]

1 Cellular Phone

2 Interpreter Pin Center,large

3 Server

3A Transceiver section

3B Addresser specification means

3C NL selection means

3D The contents record means of a communication link

3E Clock means

3F Liquidation means

4 Translator

5a, 5b Microphone

6 Loudspeaker

7 Tape Which Recorded the Contents of Conversation

8 Document Which Documented the Contents of Conversation

M1 Important point translator

M2 Translator-ed

NL The important point translator's M1 language used

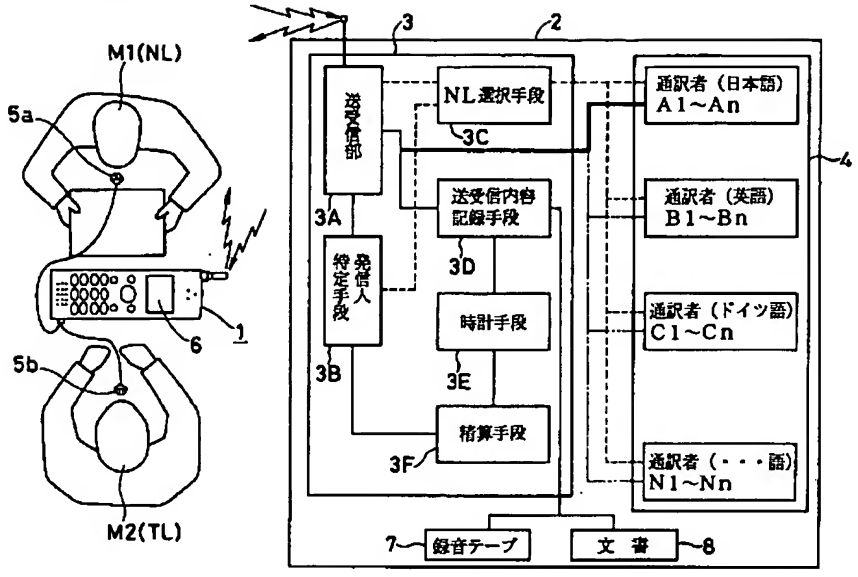
TL The translator's M2-ed language used

[Translation done.]

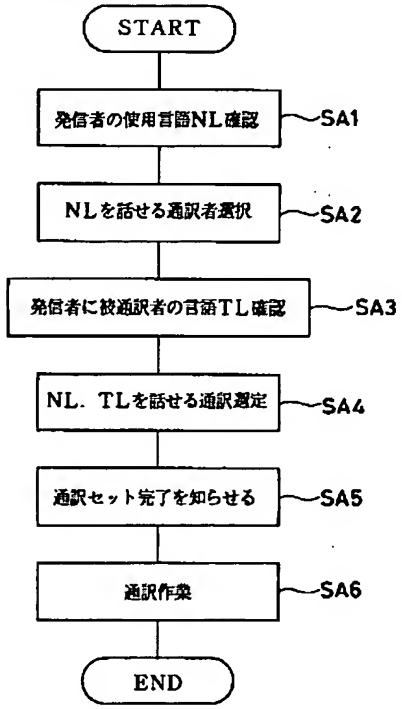
* NOTICES *

DRAWINGS

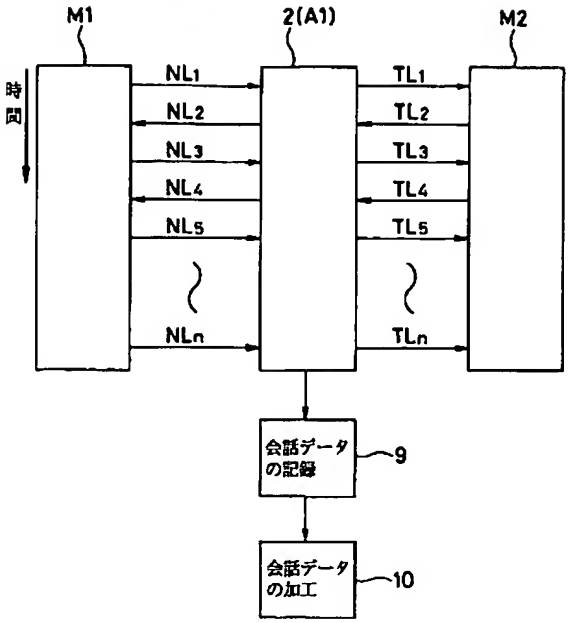
[Drawing 1]



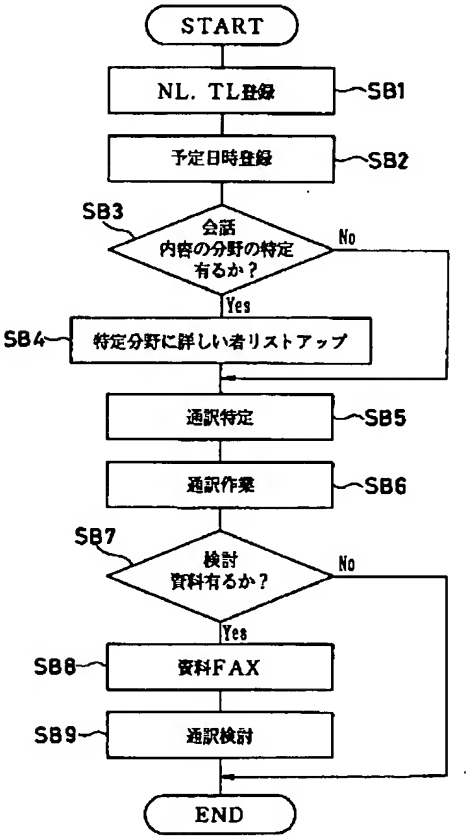
[Drawing 3]



[Drawing 2]


M1
2(A1)
M2
時間
NL1
NL2
NL3
NL4
NL5
NLn
TL1
TL2
TL3
TL4
TL5
TLn
会話データの記録
9
会話データの加工
10

[Drawing 4]


START
NL. TL登録
SB1
予定日時登録
SB2
SB3
会話内容の分野の特定有るか？
No
Yes
SB4
特定分野に詳しい者リストアップ
通訳特定
SB5
通訳作業
SB6
SB7
検討資料有るか？
No
Yes
SB8
資料FAX
SB9
通訳検討
END

[Translation done.]